

Video Cassette Recorder 

VCR-4530

SERVICE MANUAL

NO.2899617

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Section 1

GENERAL DESCRIPTION

This manual provides service information for our VHS Video Recorder.

The manual describes the principles and adjustments of mechanical and electrical operation for this model.

Service procedures given herein cover only field maintenance services.

Adjustments which require high-level instruments, jigs and techniques are excluded, since they should be performed at the factory.

Due to design modifications, the servicing procedures and data given in this manual are subject to possible change without prior notice.

Important Safety Precaution

Prior to shipment from the factory, our products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

• Precautions during Servicing

1. Parts identified by the Δ symbol are critical for safety.
Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation. These must also be replaced only with specified replacements.
Examples: RF converters, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
 - 1) Wires covered with PVC tubing
 - 2) Double insulated wires
 - 3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
 - 1) Insulation tape
 - 2) PVC tubing
 - 3) Spacers
 - 4) Insulation sheets for transistors
5. When replacing AC primary side components (transformers, power cords, etc.), wrap ends of wires securely on the terminals before soldering.
6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. When a power cord has been replaced, check that force (maximum apply force should be 20–30 lbs.) in any direction will not loosen it.
9. Also check areas surrounding repaired locations.
10. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside of unit.

- **Safety Check after Servicing**

1. **Insulation resistance test**

Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, video and audio output terminals, etc.).

2. **Dielectric strength test**

Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio output terminals, etc.).

3. **Clearance distance**

When replacing primary circuit components, confirm specified clearance distance.

Section 2

ELECTRICAL DESCRIPTION

Electrical Adjustment

PREPARATION

Electrical adjustments are required after replacing circuit components and certain mechanical parts. It is important to perform these adjustments only after all repairs and replacements have been completed. Also, do not attempt these adjustments unless the proper equipment is available.

Required test equipment

1. Oscilloscope: Wide-band, Dual-trace W/EXT TRIG 40MHz.
2. Frequency counter (7 digits or higher).
3. Color Monitor Television
4. Test tape: TPS-1, 2, 3, 6
5. Audio Noise Meter or Distortion Meter.
6. Test Signal Generator LCG-399A (PAL) or LCG-404 (PAL/SECAM)
7. Wave form monitor.
8. Vector Scope.

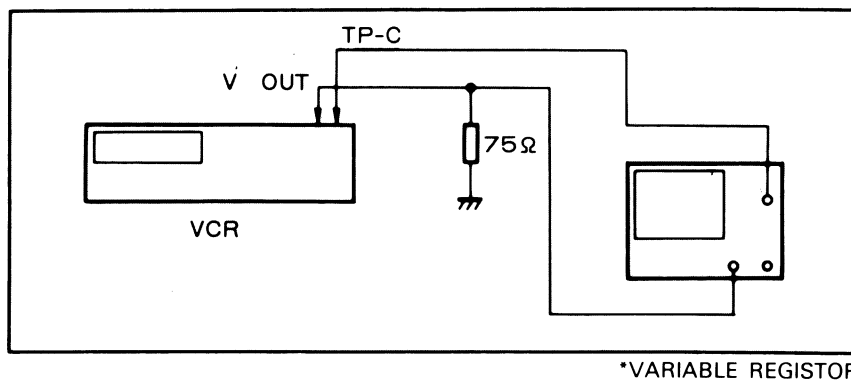
Alignment Tape Contents

Ref. No.	Video Signal	Audio Signal	Applications
TPS-2	Center Cross	1 kHz (–20dB) 6 kHz (–20dB)	• Audio Frequency Response • Skew Check
TPS-6	Digital Pattern	3 kHz (–20dB)	• Resolution Check • Wow and Flutter Checks • Picture Quality Check
TPS-3	Color Bar	1 kHz (–10dB)	• Y-level Adjustment • C-level Adjustment • Audio Level Check
TPS-1	Stairstep	6 kHz (–10dB)	• Tracking Volume Preset • Audio Azimuth

- 1 — (1) PG-1
(2) PG-2

(Specified Tape)
(Specified Measuring Equipment)
(Connections)

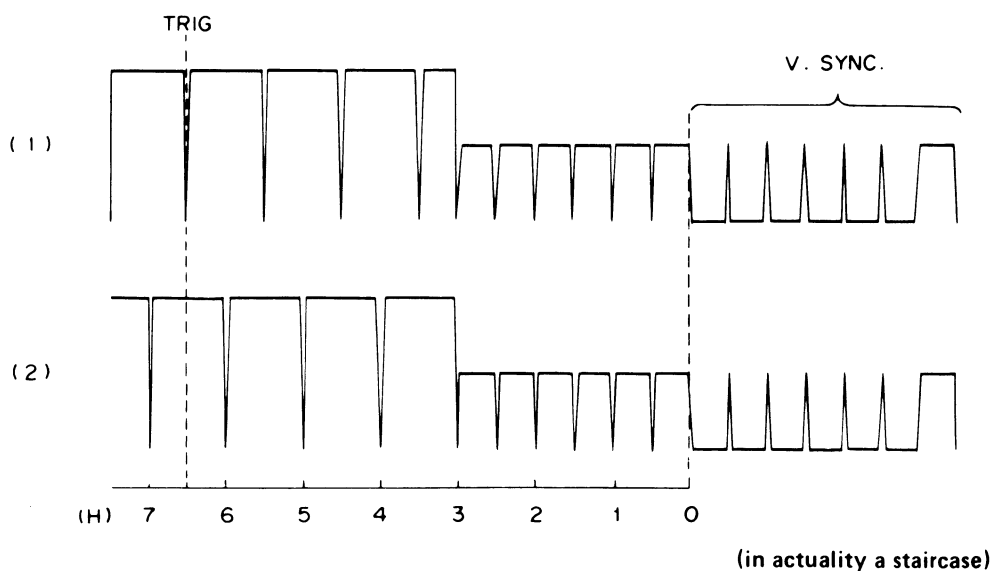
TPS-1 (A: 6KHz V: Stairsteps)
Oscilloscope (Dual-Trace W/EXT TRIG 40MHz)
Oscilloscope Ch. 1 probe to VIDEO OUT
Oscilloscope EXT TRIG probe CORE to TP-C
Oscilloscope EXT TRIG probe GND to TP-D



(Adjustments)

At PCB PG-1 ADJ. VR., set to that the no. of horizontal scan lines from the FR switching position to the V SYNC leading edge is 6.5 H PG-1
At PCB PG-2 ADJ. VR., set to that the no. of horizontal scan lines from the RF switching position to the V SYNC leading edge is 6.5 H PG-2

VHS SPECIFICATION 6.5 ± 1.5 H



Whether waveform (1) or (2) is present, adjust to 6.5 H.

2 - (1) TRACKING PRESET ADJUSTMENT

(Specified Tape)

(Specified Measuring Equipment)

(Connections)

TPS-1 (A: 6KHz V: Stairstep)

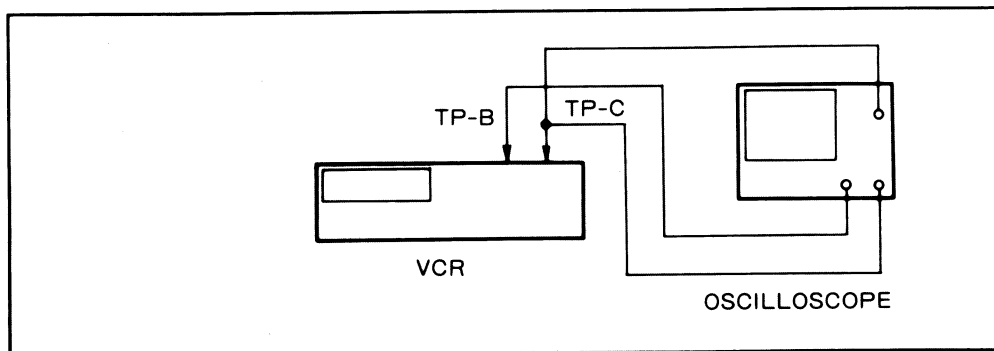
Oscilloscope (Dual-Trace W/EXT TRIG 40MHz)

Oscilloscope ch. 1 to TP-C

Oscilloscope ch. 2 to TP-B

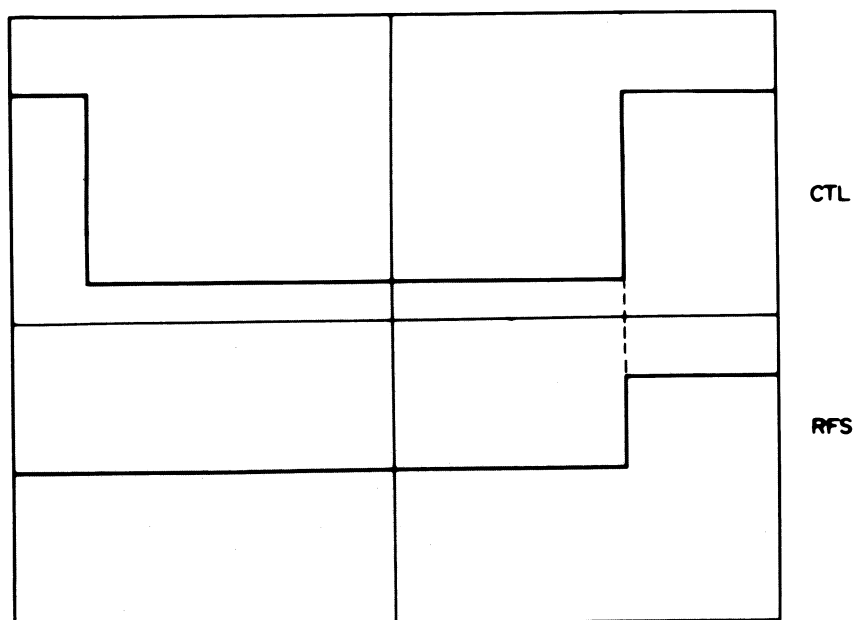
Oscilloscope EXT TRIG probe core to TP-C

Oscilloscope EXT TRIG probe GND to TP-D



(Adjustments)

At PCB TACKING PRESET ADJ.VR, set CTL output waveform so it is in the ± 0 ms position against RFS.



Oscilloscope Setting

TIME/DIV: 1ms

SCOPE: —

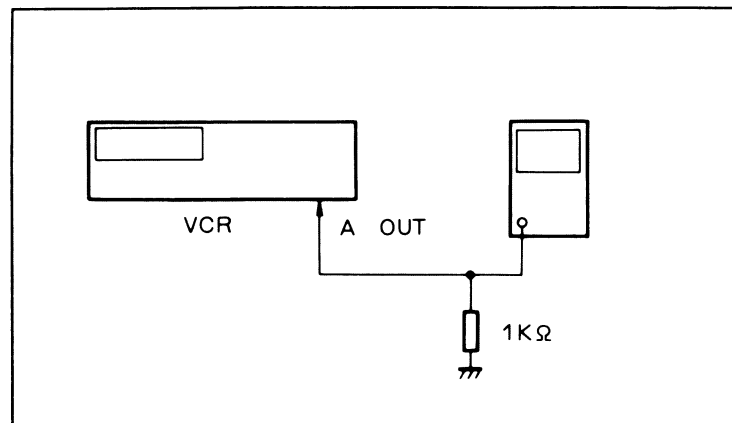
COUPLING: DC

SOURCE: EXT

VOLT/DIV: .2 (Probe x 10)

3 – (1) AUDIO AZIMUTH ADJUSTMENT

(Specified Tape)	TPS-1 (A: 6kHz V: Stairstep)
(Specified Measuring Equipment)	AUDIO NOISE METER (MN-445A, or Equivalent).
(Connections)	AUDIO OUT: AUDIO NOISE METER (w/1k Ω load)



(Adjustments)	Adjust the A/C HEAD AZIMUTH screw so the AUDIO OUT 6k output level is maximum with the TPS-1 in the playback mode(refer to diagram of deck adjustment locations for A/C AZIMUTH HEAD screw position).
(Precautionary Items)	Affix thread lock after adjusting. If, after completion of x-value adjustment, the AUDIO HEAD AZIMUTH is readjusted, readjust x-value as well.

4 - (1) X-VALUE ADJUSTMENT

- (Specified Tape)

(Specified Measuring Equipment)

(Connections)
- TPS-1 (A: 6kHz V: Stairstep)

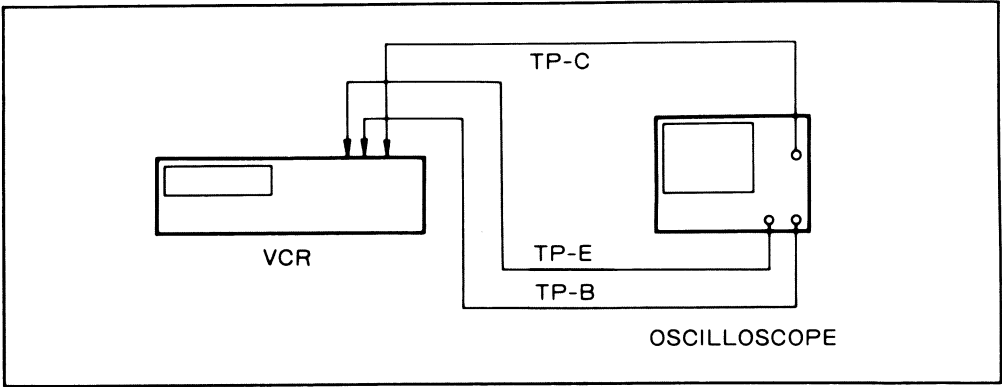
Oscilloscope (Dual-Trace W/EXT TRIG 40MHz)

Oscilloscope ch. 1 probe to TP-E

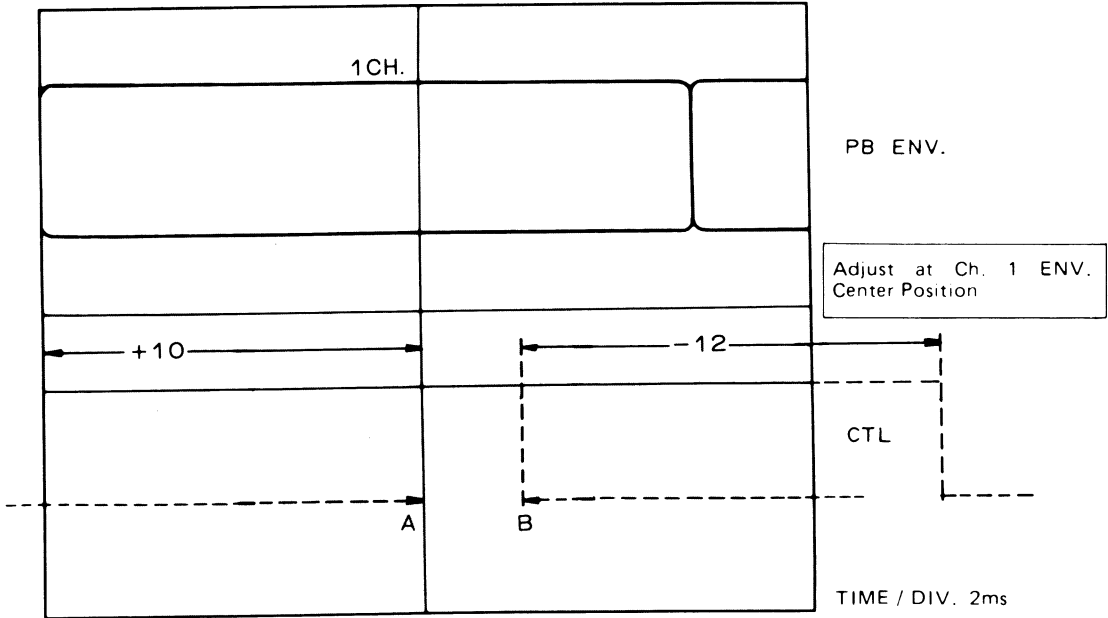
Oscilloscope ch. 2 probe to TP-B

Oscilloscope EXT TRIG probe core to TP-C

Oscilloscope EXT TRIG probe GND to TP-D



- (Adjustments)
- At tracking VR, set the x-value screw so the envelope output levels are balanced when the CTL pulse is moved from the preset position to + 10ms/ - 12ms (return tracking VR to center after finished adjusting).



A = position W/CTL at + 10mS;B = position W/CTL - 12mS

5 - (1) CCD LEVEL ADJUSTMENT

(Specified Tape)

TPS-3 (A: 1kHz V: EBU Color Bar)

(Specified Measuring Equipment)

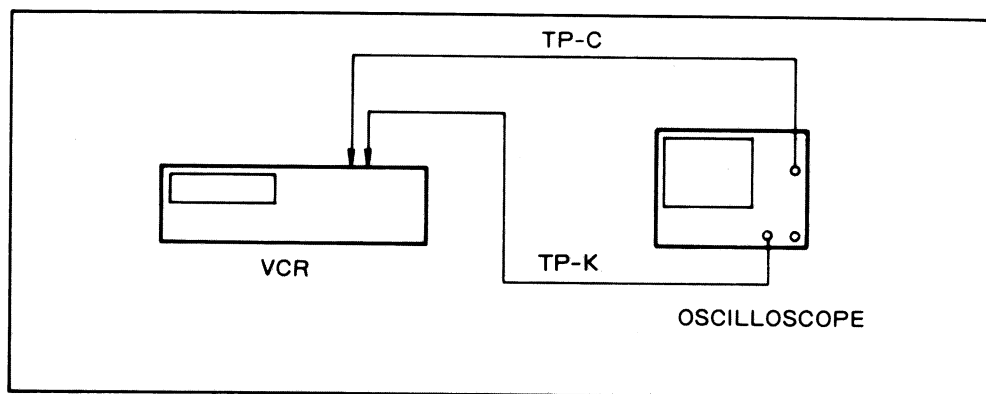
Oscilloscope (Dual-Trace W/EXT TRIG 40MHz)

(Connections)

Oscilloscope probe core to TP-K

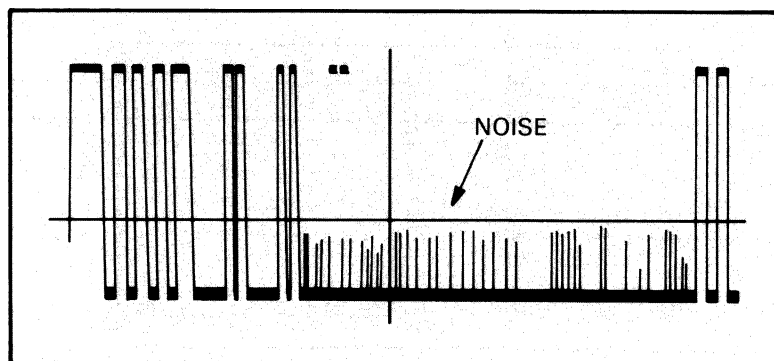
Oscilloscope EXT TRIG probe core to TP-C

Oscilloscope EXT TRIG probe GND to TP-D



(Adjustments)

Adjust the CCD LEVEL ADJ.VR. so that the noise element in the waveform of TP-K output became as less it can be.



Oscilloscope Setting TIME/DIV:0.1mS VOLTS/DIV:0.1V (Probe×10)

6 - (1) PB Y LEVEL ADJUSTMENT

(Specified Tape)

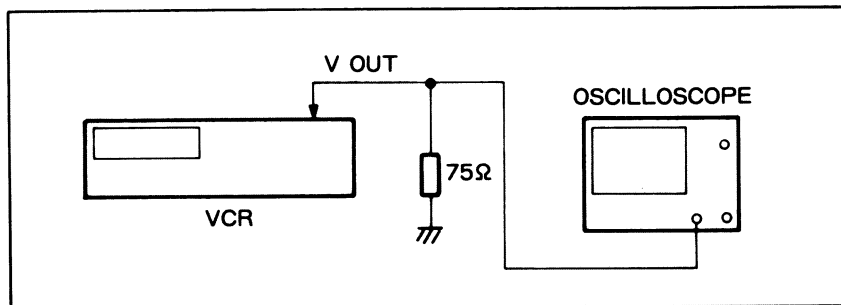
TPS-3 (A: 1KHz V:EBU Color Bar)

(Specified Measuring Equipment)

Oscilloscope (Dual-Trace W/EXT TRIG 40MHz)

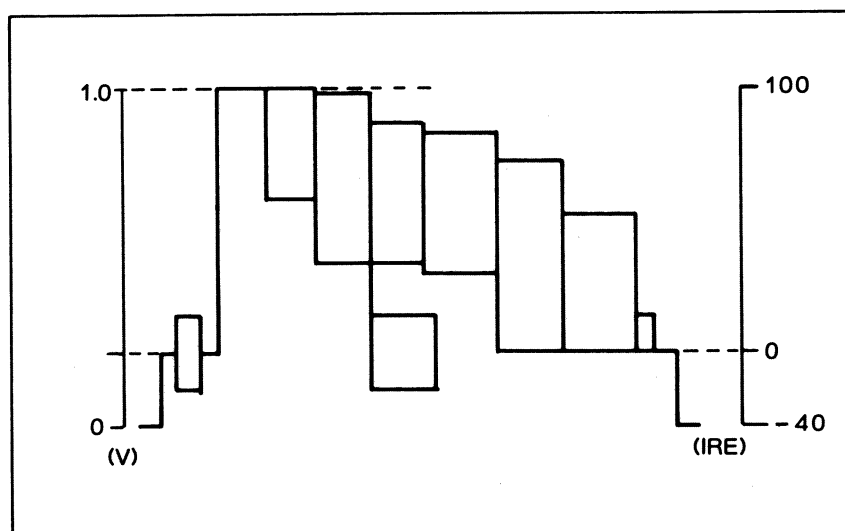
(Connections)

VIDEO OUT: Oscilloscope (W/75 Ω load)



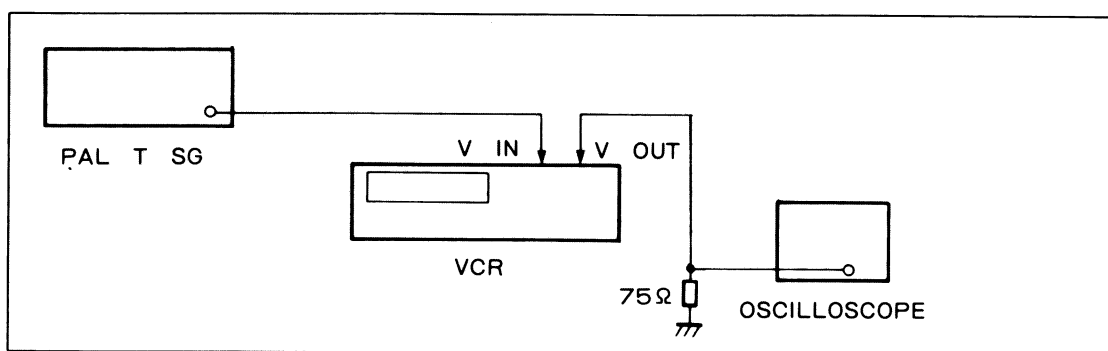
(Adjustments)

At PCB PB Y LEVEL ADJ. VR., set VIDEO OUT output level to $1.0 \pm 0.1V_{p-p}$.



7 - (1) Y AGC LEVEL ADJUSTMENT

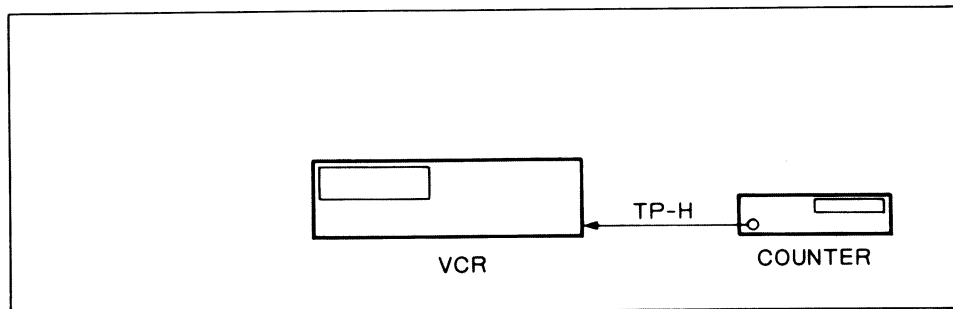
(Measurement Tape)	E-E Mode
(Specified Measuring Equipment)	PAL TEST SIGNAL GENERATOR (LCG-399A or 404 Leader Electronics or Equivalent). Oscilloscope (W/EXT TRIG)
(Test Signal)	EBU Color Bar (Refer to Test Signal Chart)
(Connections)	VIDEO IN: TEST SIGNAL GENERATOR VIDEO OUT: oscilloscope (terminate at 75Ω)



(Adjustments)	At PCB Y AGC LEVEL ADJ. VR., set VIDEO OUT waveform is within the range of 1 ± 0.1 Vp-p.
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8 - (1) SYNC TIP LEVEL ADJUSTMENTS (CARRIER)

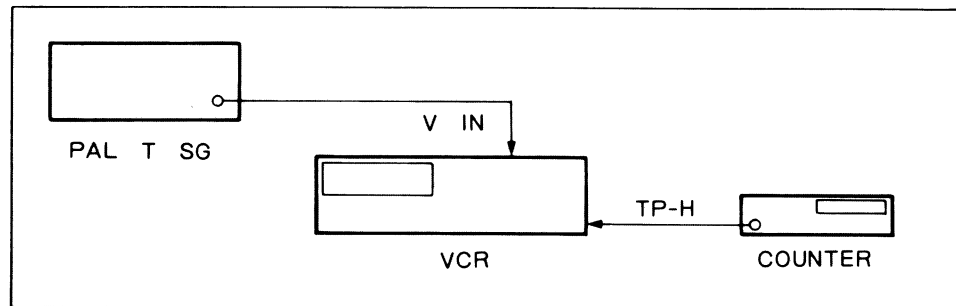
(Measurement Tape)	REC Mode (Blank Tape T-120 TDK, Victor: Normal)
(Specified Measurement Equipment)	PAL Signal Generator (LCG-399A or 404 Type Leader Electronics or Equivalent). Frequency Counter (LCD-825 Type Leader Electronics or Equivalent).
(Test Signal)	(NO SIGNAL)
(Connections)	VIDEO IN: N.C. VIDEO OUT: N.C. Connect frequency counter probe core to TP-H. Connect frequency counter probe GND to TP-Z.



(Adjustments)	At PCB SYNC TIP LEVEL ADJ.VR., set test pin TP-H frequency to 3.8 ± 0.1 MHz.
(Precautionary Items)	When adjusting VIDEO IN without any signal, set to 3.8 ± 0.1 MHz. Verify that the TV tuner is not receiving any broadcast at this time. It is helpful to calibrate the oscilloscope probe using the frequency counter probe.

8 – (2) WHITE PEAK LEVEL ADJUSTMENT (DEVIATION)

(Measurement Tape)	REC Mode (Blank Tape T-120 TDK, Victor: Normal)
(Specified Measurement Equipment)	PAL Signal Generator (LCG-399A or 404 Type Leader Electronics or Equivalent). Frequency Counter (LDC-825 Type Leader Electronics or Equivalent).
(Test Signal)	White Raster 100% (Refer to Test Signal Chart)
(Connections)	VIDEO IN: TEST Signal Generator VIDEO OUT: N.C. Connect frequency counter probe core to TP-H. Connect frequency counter probe GND to TP-Z.



(Adjustments)	At PCB WHITE PEAK LEVEL ADJ.VR., set test pin TP-H to $4.6 \pm 0.05\text{MHz}$.
(Precautionary Items)	White and yellow portions will become whitish if the self-recording and playback of the color bar is carried out with the white peak level over 4.6 MHz. Adjust SYNC TIP LEVEL VR. and WHITE PEAK LEVEL to their respective frequencies by turn balancing them against each other.

9 - (1) REC C LEVEL ADJUSTMENT

(Measurement Tape)

(Specified Measurement Equipment)

(Test Signal)

(Connections)

REC Mode (Blank Tape T-120 TDK : Normal)

PAL Signal Generator (LCG-399A or 404 Type Leader Electronics or Equivalent).

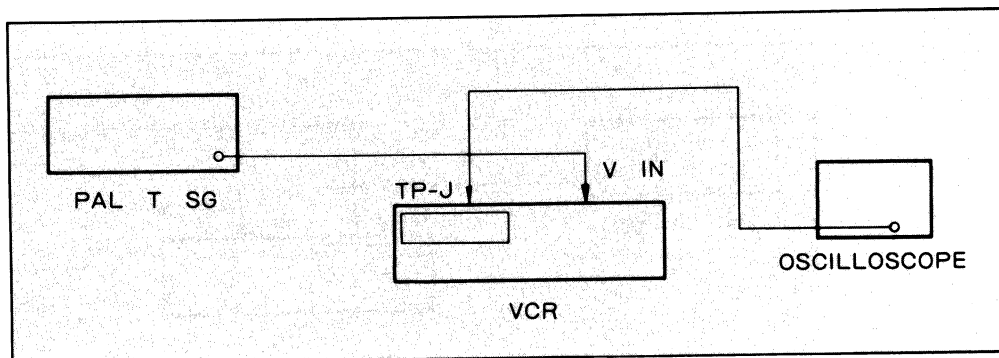
Oscilloscope (40MHz W/EXT TRIG)

EBU Color Bar (Refer to Test Signal Chart)

VIDEO IN: TEST Signal Generator

VIDEO OUT: N.C.

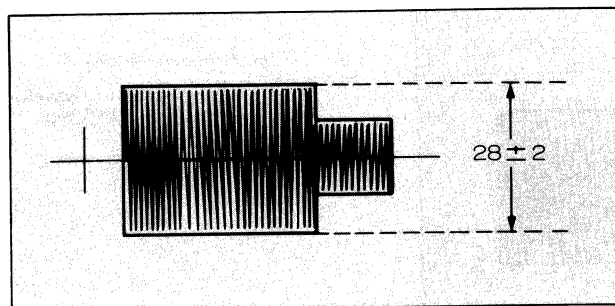
Connect oscilloscope probe to deck head amp TP-J (connect probe earth to the head amp shield case).



(Adjustments)

Completely cut Y level by rotating PCB REC Y LEVEL ADJ. VR. REC Y level semi-fixed VR as far as possible in a clockwise direction.

At PCB REC C LEVEL ADJ. VR., set TP-J output waveform to 28 ± 2 mVp-p.



Oscilloscope is 1:1

9 - (2) REC Y LEVEL ADJUSTMENT

(Measurement Tape)

(Specified Measurement Equipment)

(Test Signal)

(Connections)

REC Mode (Blank Tape T-120 TDK: Normal)

PAL Signal Generator (LCG399A Type Leader Electronics or Equivalent).

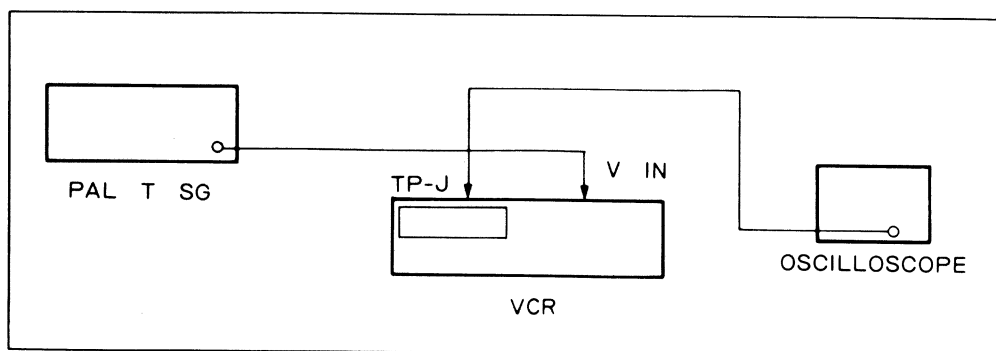
Oscilloscope (40MHz W/EXT TRIG)

EBU Color Bar (Refer to Test Signal Chart)

VIDEO IN: TEST Signal Generator

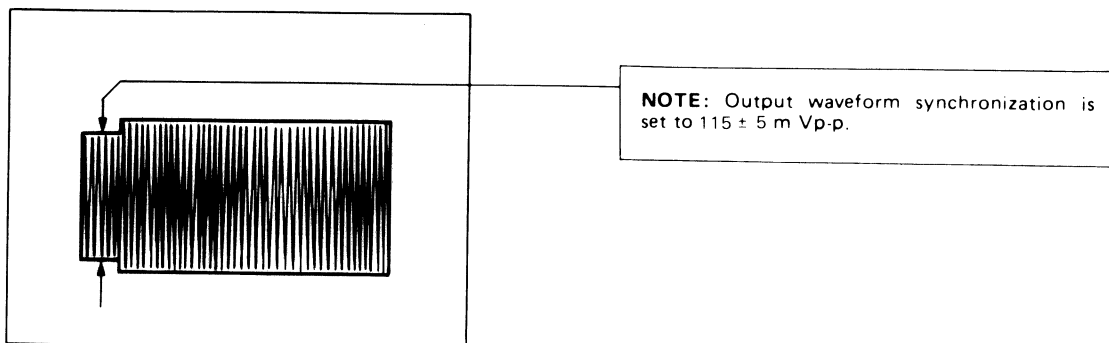
VIDEO OUT: N.C.

Connect oscilloscope probe to deck head amp TP-J (connect probe earth to the head amp shield case).



(Adjustments)

At PCB REC Y LEVEL ADJ.VR. set TP-J output waveform to 115 ± 5 m Vp-p.



10 - (1) BIAS LEVEL ADJUSTMENT

(Measurement Tape)

(Specified Measurement Equipment)

(Connections)

REC Mode (Blank Tape T-120 TDK: Normal)

Audio Noise Meter (MN-445A or Equivalent).

VIDEO IN: N.C.

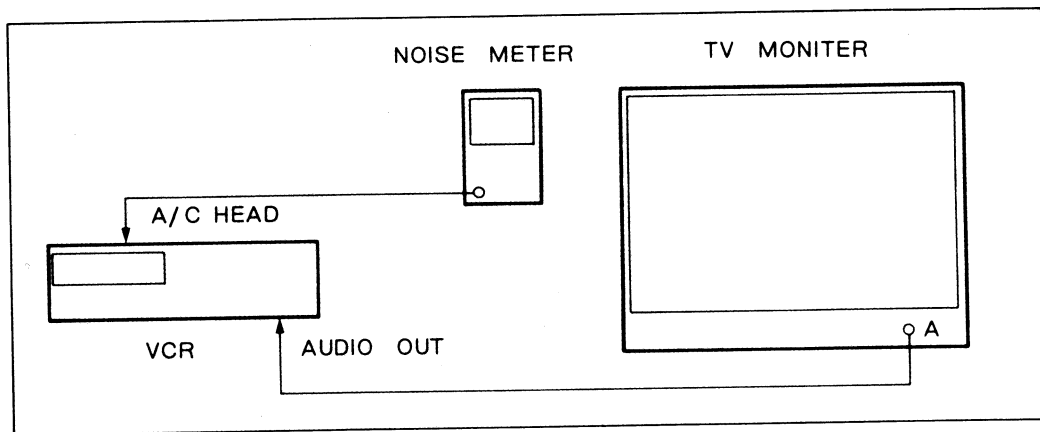
VIDEO OUT: N.C.

AUDIO IN: N.C.

AUDIO OUT: Connect to TV monitor, etc.

Connect audio noise meter probe core to A/C head lower side pin.

Connect audio noise meter probe earth to A/C head upper side pin.



(Adjustments)

(Precautionary Item)

At PCB BIAS LEVEL ADJ.VR, set voltage between A/C head upper and lower pin terminals at $3.5 \pm 0.5\text{mV}$.

Adjust very carefully, as carrying out self-recording and playback of the audio signal results in a drop in output and greater distortion.

11 - (1) AUDIO OUTPUT LEVEL ADJUSTMENT

(Specified Tape)

TPS-3 (A: 1kHz V: EBU Color Bar) PLAY Mode

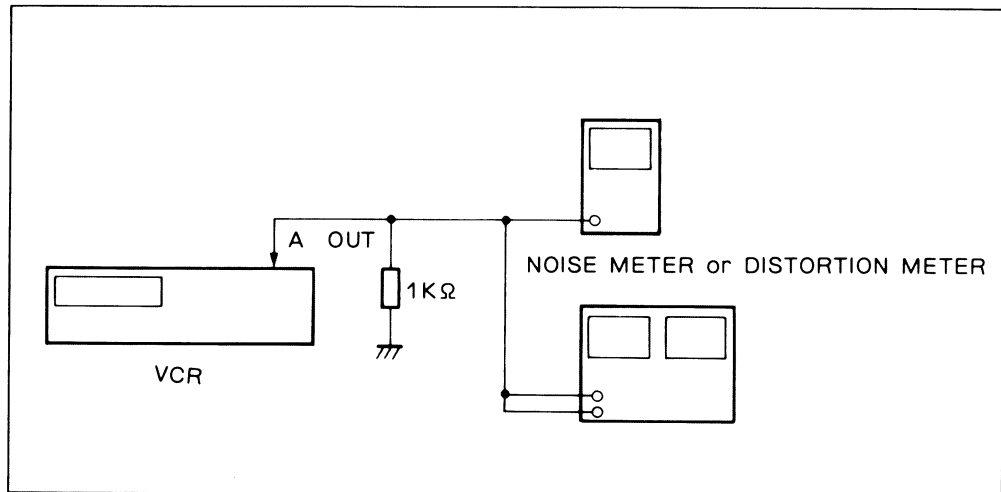
(Specified Measurement Equipment)

Audio Noise Meter (MN-445A or Equivalent).

Automatic Distortion Meter (760D or Equivalent).

(Connections)

Audio Out: to either noise meter or distortion meter



(Adjustments)

At PCB AUDIO output Level ADJ.VR. set so that the 1kHz level at 1kΩ load is 200mVrms. At the same time, verify that distortion is within 3%.

(Precautionary Item)

No noise, oscillation, etc. in audio output waveform.

1 RE

100

80

60

40

20

0

-20

-40

0

10.5

18.5

26.5

34.5

42.5

50.5

58.5

62.4 (μ S)

+20

+20

+20

+20

+40

+40

+40

+60

+60

+80

+80

+100

+100

+120

0

-20

-20

0

20

40

60

80

100

120

140

160

180

200

220

240

260

280

300

320

340

360

380

400

420

440

460

480

500

520

540

560

580

600

620

640

660

680

700

720

740

760

780

800

820

840

860

880

900

920

940

960

980

1000

1020

1040

1060

1080

1100

1120

1140

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1180

1200

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7080

7100

7120

7140

7160

7180

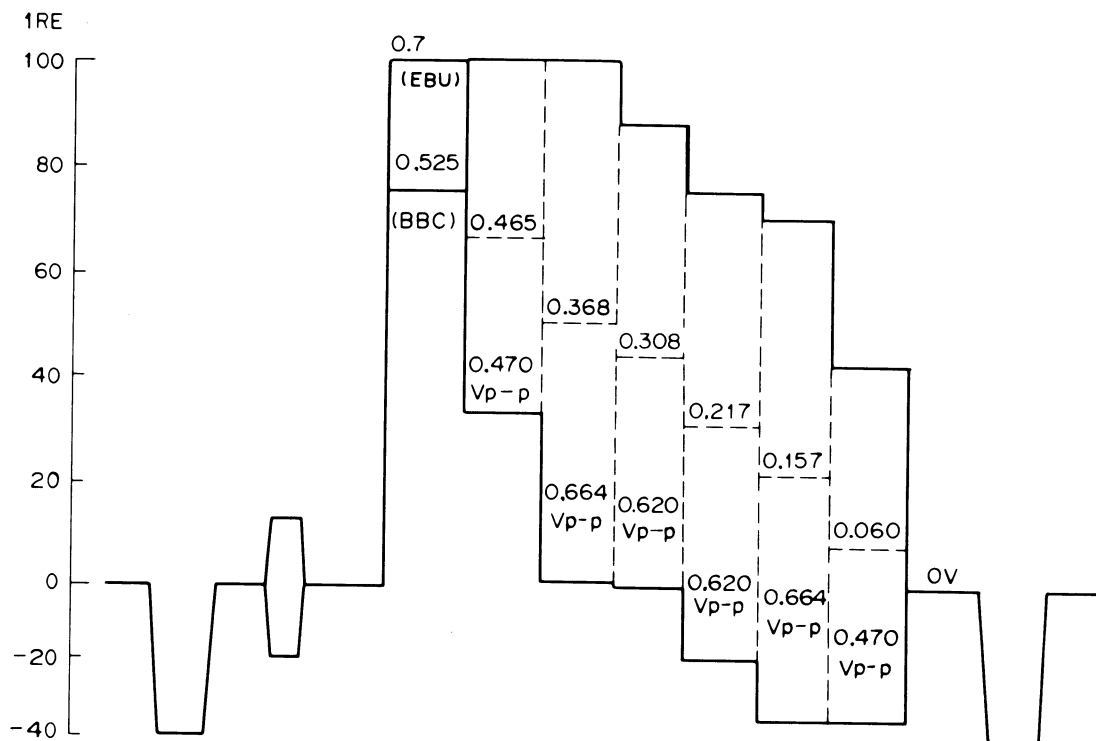
7200

7220

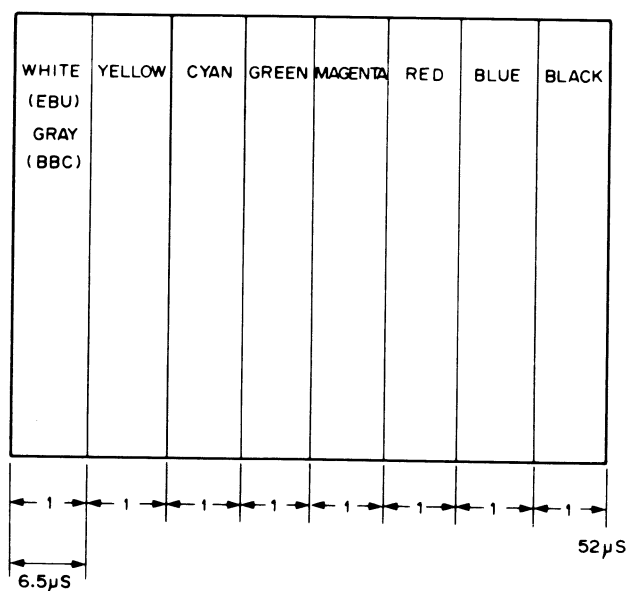
7240

The graph illustrates the variation of the output signal (I RE) as a function of the White Raster. The Y-axis represents the signal level, ranging from -40 to 100. The X-axis represents time in microseconds (μS), ranging from 0 to 62.4. The signal starts at 0, drops to -40 at 0 μS , rises to +20 at 10.5 μS , and then drops to -20. It then rises sharply to +100 at 62.4 μS and remains constant.

EBU, BBC COLOUR BAR



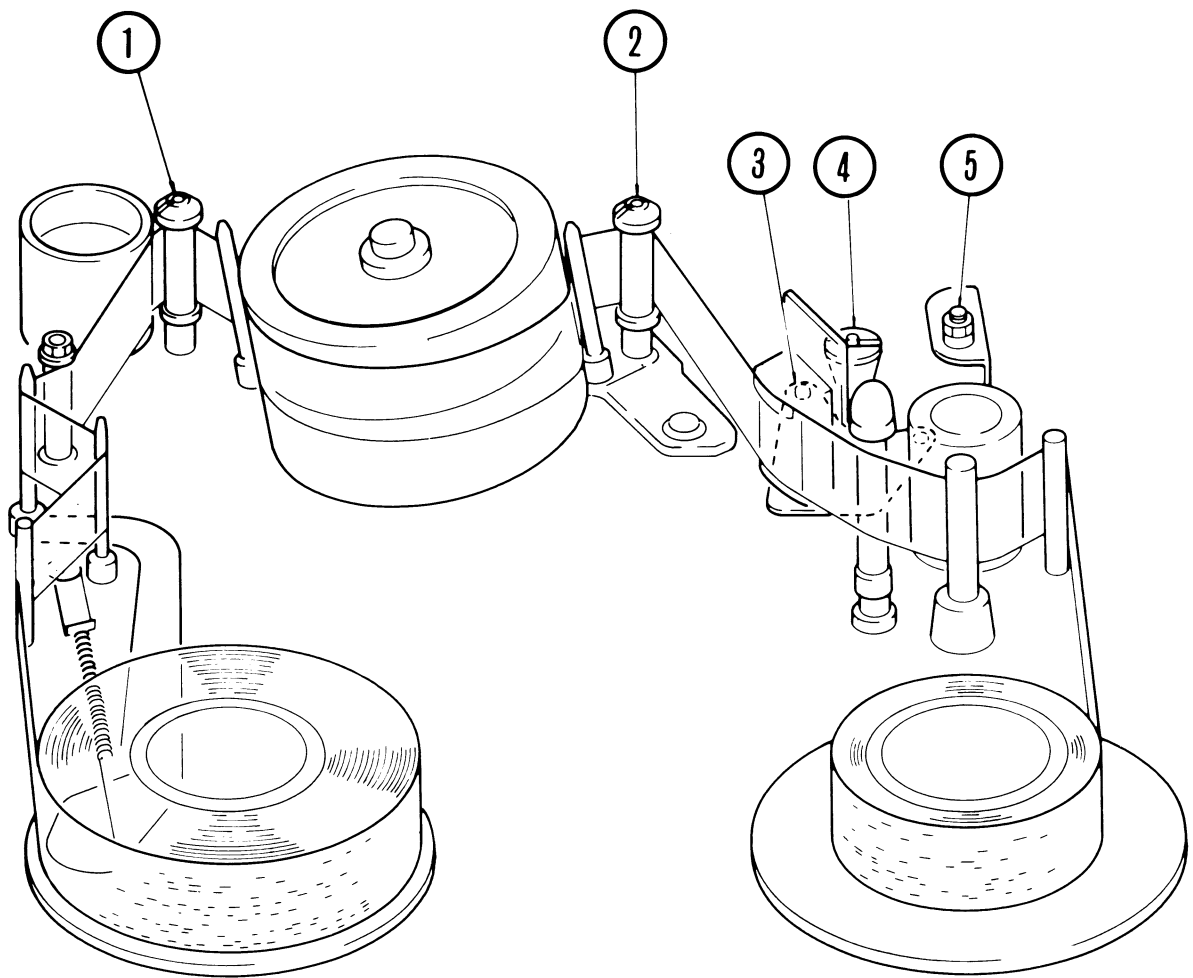
COLOUR BAR PICTURE



Test Points and Alignment Point (VCR DECK)

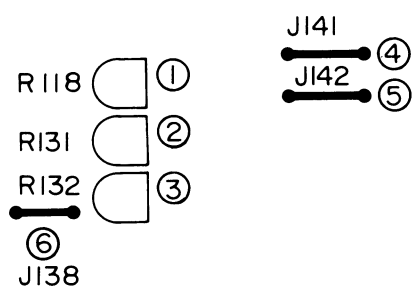
VCR DECK adjustment points

1. ENVELOPE entrance adjustment screw
2. ENVELOPE exit adjustment screw
3. AUDIO AZIMUTH adjustment screw
4. A.C. HEAD adjustment screw
5. X-Value adjustment screw



TEST POINT	DESCRIPTION	PART NO
TP-A	VIDEO OUT/Y AGC LEVEL	—
TP-B	CTL	J138
TP-C	RFS	J142
TP-D	GND	J141
TP-E	PB ENV	R2D5
TP-H	SYNC TIP LEVEL	R2D6
	WHITE PEAK LEVEL	
TP-J	REC C	R2D7
	REC Y	
TP-K	CCD LEVEL	R2D9
TP-Z	GND (LINEAR)	DECK

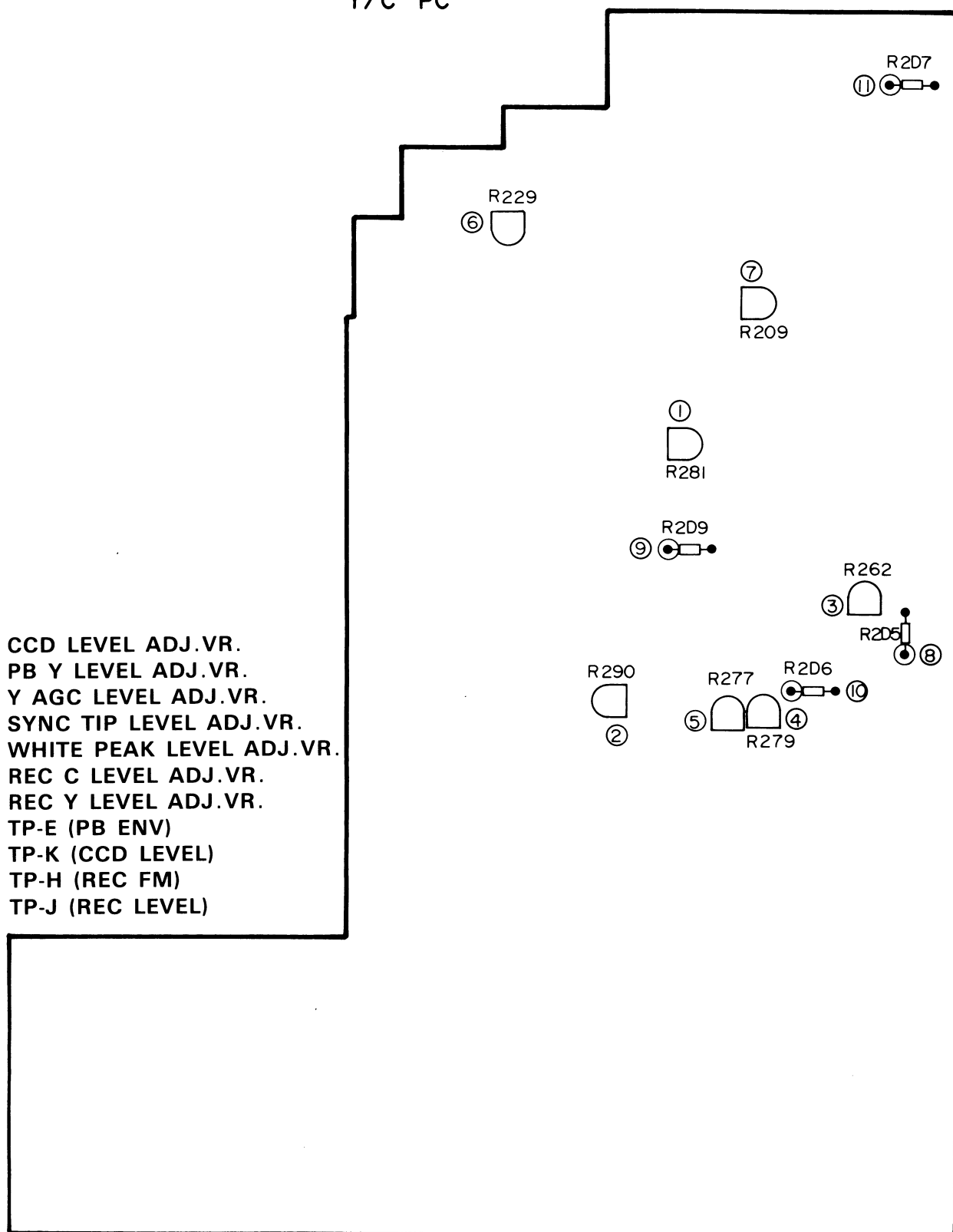
MAIN PC



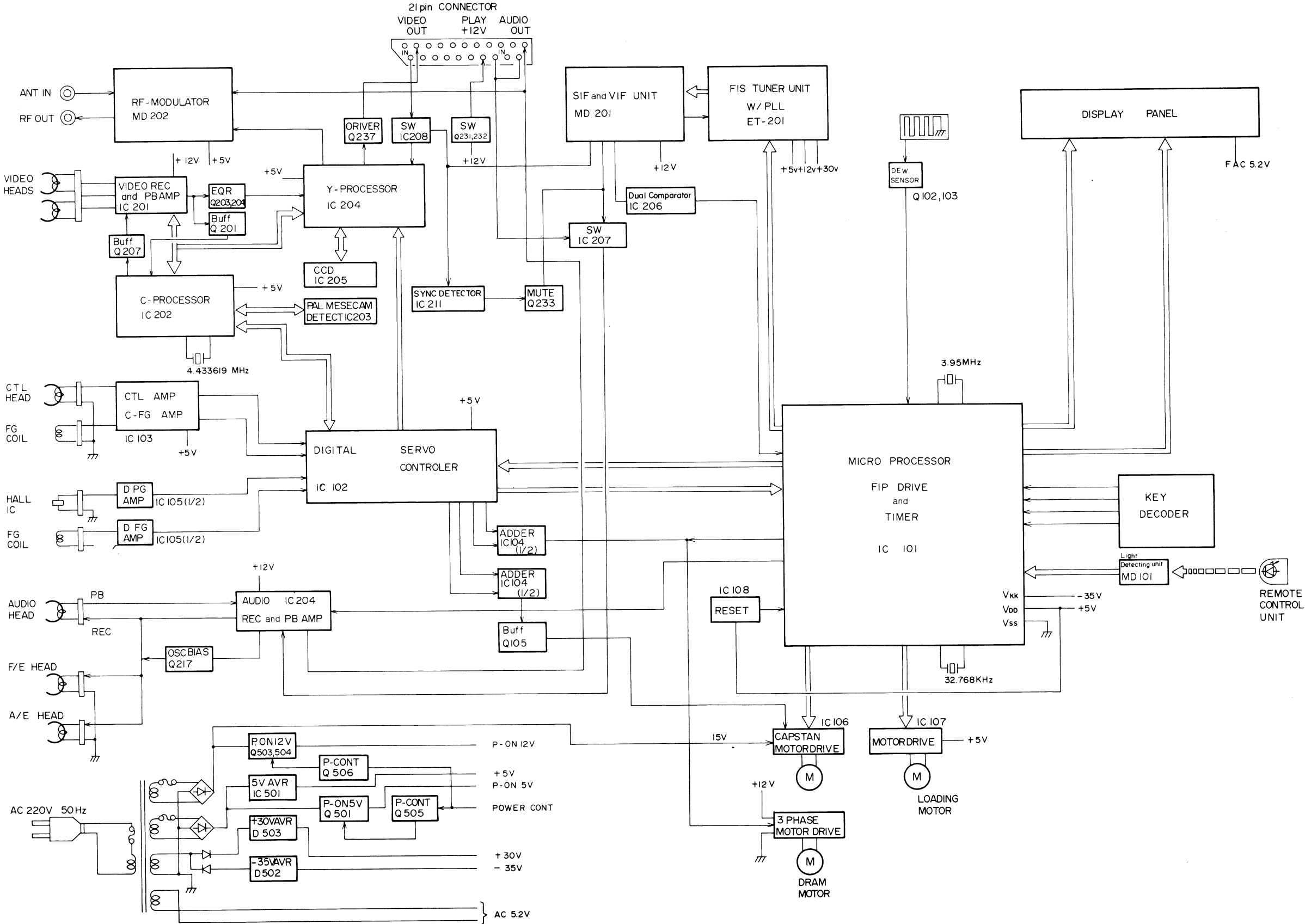
1. TRACKING PRESET
ADJ.VR.
2. PG-2 ADJ.VR.
3. PG-1 ADJ.VR.
4. TP-D (GND)
5. TP-C (RFS)
6. TP-B (CTL)

Y/C PC

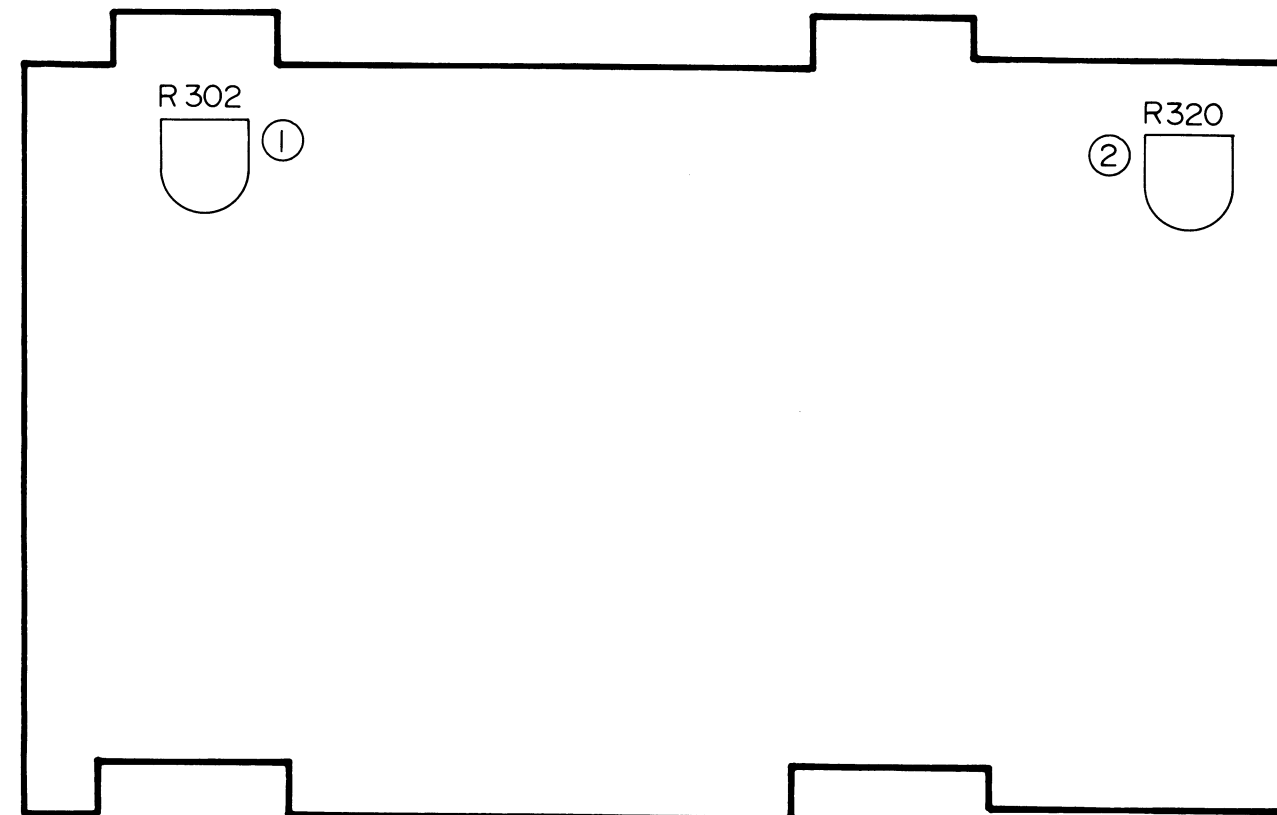
1. CCD LEVEL ADJ.VR.
2. PB Y LEVEL ADJ.VR.
3. Y AGC LEVEL ADJ.VR.
4. SYNC TIP LEVEL ADJ.VR.
5. WHITE PEAK LEVEL ADJ.VR.
6. REC C LEVEL ADJ.VR.
7. REC Y LEVEL ADJ.VR.
8. TP-E (PB ENV)
9. TP-K (CCD LEVEL)
10. TP-H (REC FM)
11. TP-J (REC LEVEL)



Block Diagram



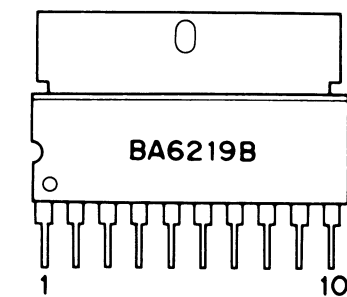
AUDIO PC



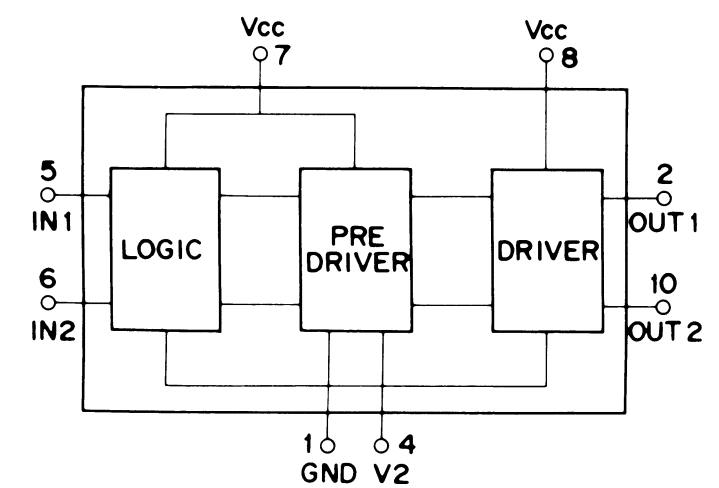
1. AUDIO BIAS LEVEL ADJ.VR.
2. PB AUDIO LEVEL ADJ.VR.

IC Internal Diagram (BA6219B)

1) PIN ASSIGNMENTS (TOP VIEWS)



2) BLOCK DIAGRAM



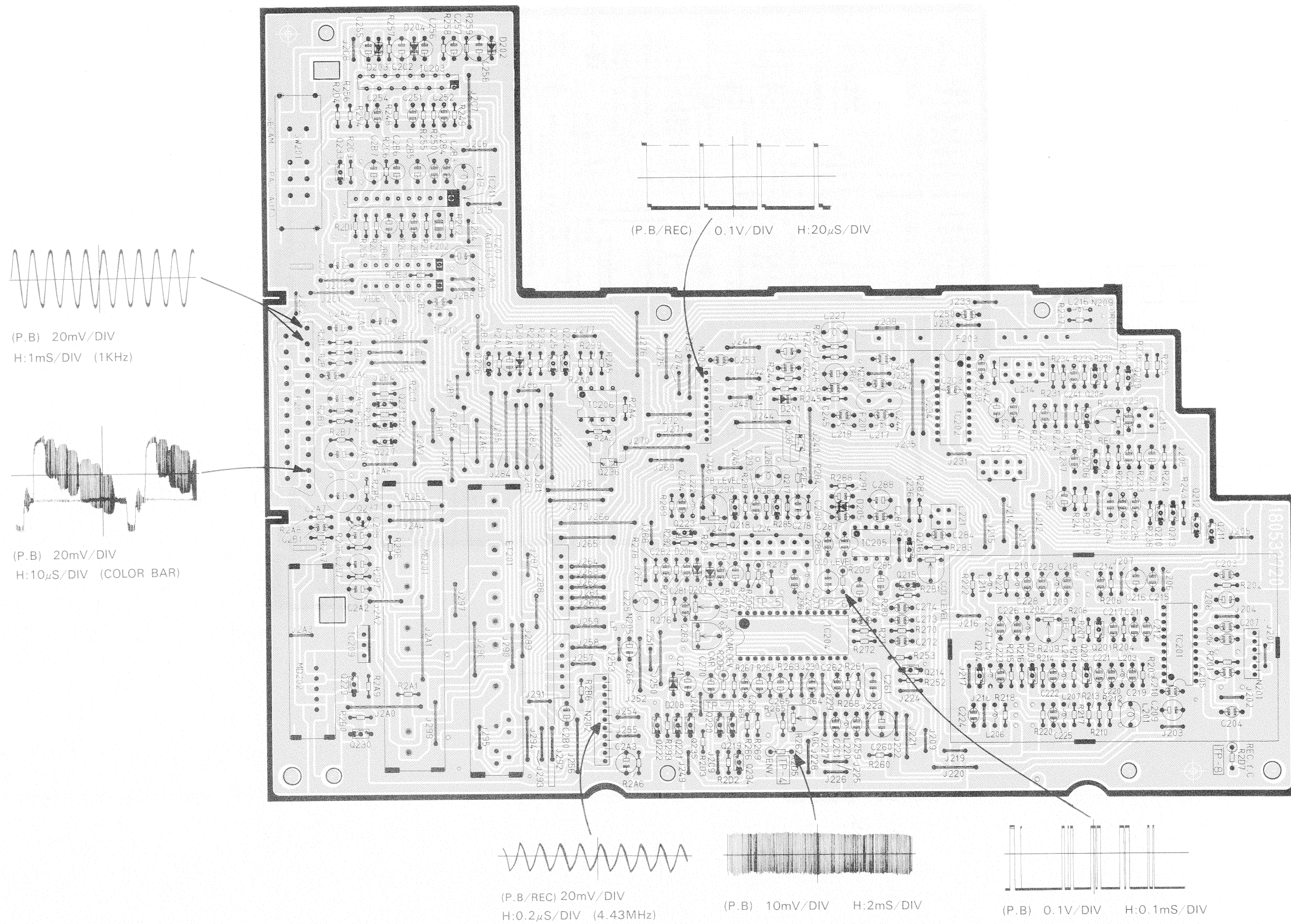
3) FUNCTION TABLE

IN1	IN2	OUT1	OUT2
1	1	L	L
0	1	L	H
1	0	H	L
0	0	OPEN	OPEN

INPUT LEVEL 1 :
 $3V \leq IN1, 2 \leq 3V = 1$
 INPUT LEVEL 0 :
 $\leq 1V \quad IN1, 2 \leq 1V = 0$

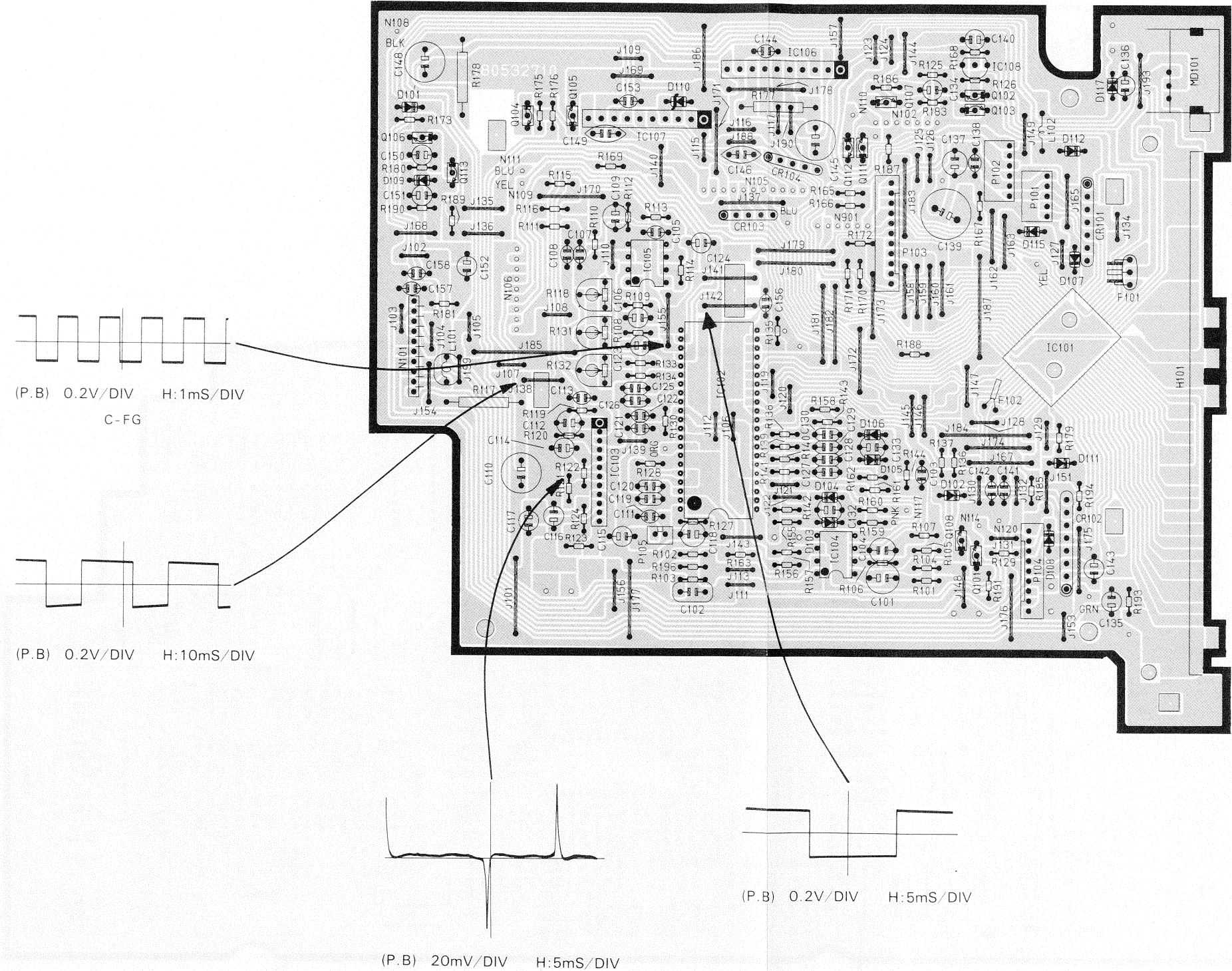
Circuit Board Diagram

PC BOARD ASS'Y(Y/C) 3590020/3655120



Circuit Board Diagram

PC BOARD ASS'Y(MAIN) 3593410/3655110



Terminology Changes

The following terms has been changed as a result of the use of a new CAD system.

Description	Parts No.	CAD Code
◆ IC	IC101	LA3373 MT
		No connection Description (LA3373) Circuit Parts Number Head Name
◆ Transistor	Q101	2SC2785T E F
		Rank No Connection Description (2SC2785) Circuit Parts number Head Name
◆ Diode	D101	1S2835T
		No connection Description (1S2835) Circuit Parts Number Head Name
◆ Resistor	R101	RC102F
		Tolerance F: ± 1% G: ± 2% J: ± 5% (No Mark) K: ± 10% M: ± 20% H: No Connection Resistance (10 × 10 ³ = 1000ohm) Carbon Resistor 1/6W Circuit Parts Number Head Name
	R102	RA1R1
		Resistance (1.1ohm) Decimal Point Mark Chip Resistor 2125 1/10W
◆ Capacitor (Chip)	C101	CA200C
		Temperature Characteristic C: CH, CJ, CK U: UJ S: SL B: B D: D Capacity (20 × 10 ⁰ = 20pF) Chip Capacitor 2125 Type Circuit Parts Number Head Name
◆ Capacitor (Ceramic)	C101	SL1R5H or S or Z
		No Connection Capacity (1.5pF) Decimal Point Mark Characteristic (Ceramic SL)
◆ Capacitor (Electrolytic)	C101	ES1/50H or F or Z
		No Connection Voltage Proof (50V) Capacity (1 μF) Electrolytic SSM Type
◆ Hybrid IC	IC102	HIC*****
◆ CR Component	CR101	CR*****
◆ In-Line Block	IB101	IB*****
◆ Serge Absorber	D102	Z*****
◆ LED	LD101	LED*****
◆ LCD	H101	LCD*****
◆ FIP	H102	FIP*****
◆ Pilot Lamp	PL101	PL*****
◆ Neon Bulb	NE101	NE*****
◆ Trimmer Cap.	C102	CT*****
◆ CFC Assy	C103	CFC*****
◆ Coil	L101	L*****
◆ Filter	F101	F*****

Description	Type	Capacity Limit	No Marked Tolerance
Chip	CK, CJ, CH, UJ CH, UJ CH, SL SL, B D	1PF~5PF 6PF~10PF 12PF~470PF 680PF~0.022μF 0.033μF~0.1μF	C (±0.25PF) D (±0.5PF) J (±5%) K (±10%) M (±20%)
Ceramic	General B	1PF~5PF 6PF~10PF 12PF~270PF 100PF~680PF	C D J K
Semi-Conductor	SR BC	0.001μF~0.068μF 0.1μF~0.2μF	K Z (-20%~+80%)
Mylar (M)		0.001μF~0.1μF	J
TF		0.1μF~0.47μF	J
PS, NPS		470PF~1000PF	G (±2%), J
ALSICON (AS)		0.1μF~0.22μF	M
Tantalum (TA)		0.15μF~10μF	M
Electrolytic	General	0.1μF~220μF	M

Head Name	Description	Head Name	Description
ET	Electrolytic Tuner	NE	Neon Bulb
MT	Manual Tuner	PL	Pilot Lamp
PT	Push Button Tuner	C*	Capacitor
K	Relay	R**	Resistor
MC	Mike	L	Transformer
SP	Speaker	L	Coil, Inductor
IC	IC, Hybrid IC	F	Ceramic Filter, Crystal
IB	In-Line Block	W	Printed Circuit Board
CR	CR Component	BL	Block PC Assy
Q	Transistor	P	Connector Post
D	Diode, Serge Absorber	TP	Check Pin
LD	LED	AJ	Antenna Jack
H	LCD	SW	Switch
H	FIP	VR	Volume

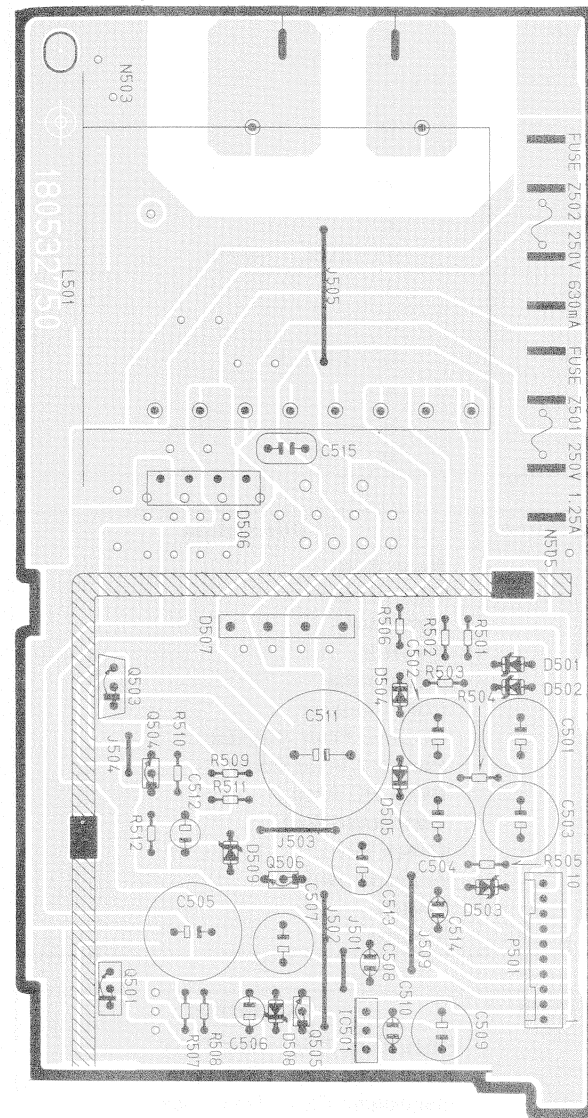
CAD Code	* Capacitor
CA****	Chip Capacitor 2125 Type
CB****	Chip Capacitor 3216 Type
SL***	Ceramic Capacitor SL Type
B***	Ceramic Capacitor B Type
F***	Ceramic Capacitor F Type
CH***	Ceramic Capacitor CH Type
LH***	Ceramic Capacitor LH Type
PH***	Ceramic Capacitor PH Type
RH***	Ceramic Capacitor RH Type
SH***	Ceramic Capacitor SH Type
TH***	Ceramic Capacitor TH Type
UJ***	Ceramic Capacitor UJ Type
SR***	Semi-Conductor Cap. SR Type
BC***	Semi-Conductor Cap. BC Type
M***	Mylar Capacitor
TF***	TF Capacitor
NP***	NPS Capacitor
AS****	ALSICON Capacitor
TA****	Tantalum Capacitor
ES****	Electrolytic Cap. SSM Type
ESL****	Electrolytic Cap. SSM-L Type
ESH****	Electrolytic Cap. SSM-H Type
ESB****	Electrolytic Cap. Bi-Polar
EG****	Electrolytic Cap. GSM Type
EE****	Electrolytic Cap. SEM Type

CAD Code	* Capacitor
EA****	Electrolytic Cap. Aibis Type
EL****	Electrolytic Cap. LSM Type
EH****	Electrolytic Cap. HPW Type
CT*****	Trimmer Capacitor

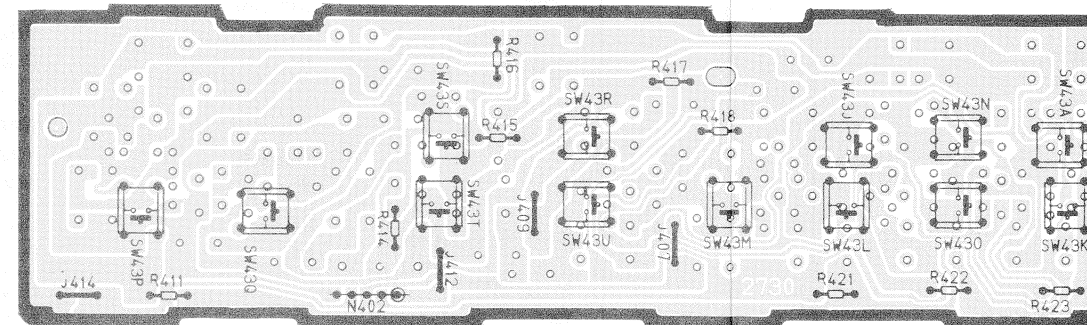
CAD Code	** Resistor
RA***	Chip Resistor 2125 Type
RB***	Chip Resistor 3216 Type
RC***	Carbon Resistor 1/6W S Type
RD***	Carbon Resistor 1/4W U Type
RU***	Carbon Resistor 1/6W U Type
RF***	Carbon Resistor 1/2W S Type
RK*** F	Metal Film Resistor 1/4W S ±1%
RL*** F	Metal Film Resistor 1/6W S ±1%
RP***	Metal Oxide Resistor 1W S Type
RQ***	Metal Oxide Resistor 2W S Type
RM***	Cement Resistor 5W S Type
RV***	Variable Resistor Vertical Type 6φ
RV*** A	Variable Resistor Vertical Metal 6φ
RV*** B	Variable Resistor Down Type 6φ
RV*** C	Variable Resistor Vertical 6φ 4pin
PR***	Printed resistor (on PC Board)

Circuit Board Diagram

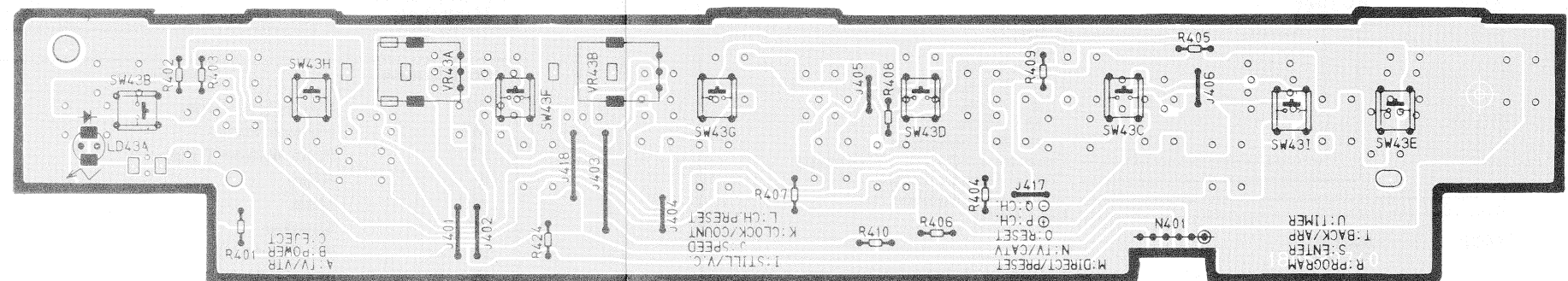
PC BOARD ASS'Y(REG)
3590030/3655130



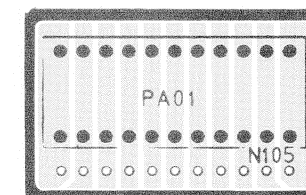
PC BOARD ASS'Y(DISP-R) 3581710/3656640



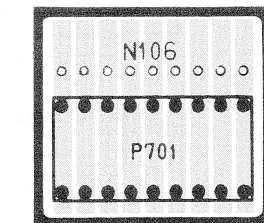
PC BOARD ASS'Y(DISP-L) 3581720/3655150



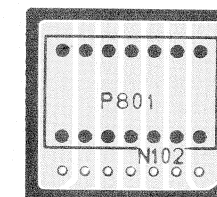
PC BOARD ASS'Y(CON-11)
3573560/3655160



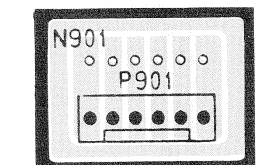
PC BOARD ASS'Y(CON-09)
3573570/3655170



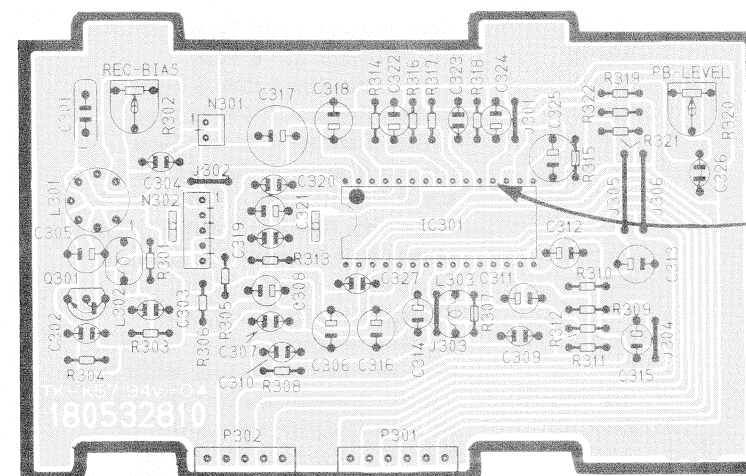
PC BOARD ASS'Y(CON-07)
3573580/3655180



PC BOARD ASS'Y(CON-06)
3573590/3655190

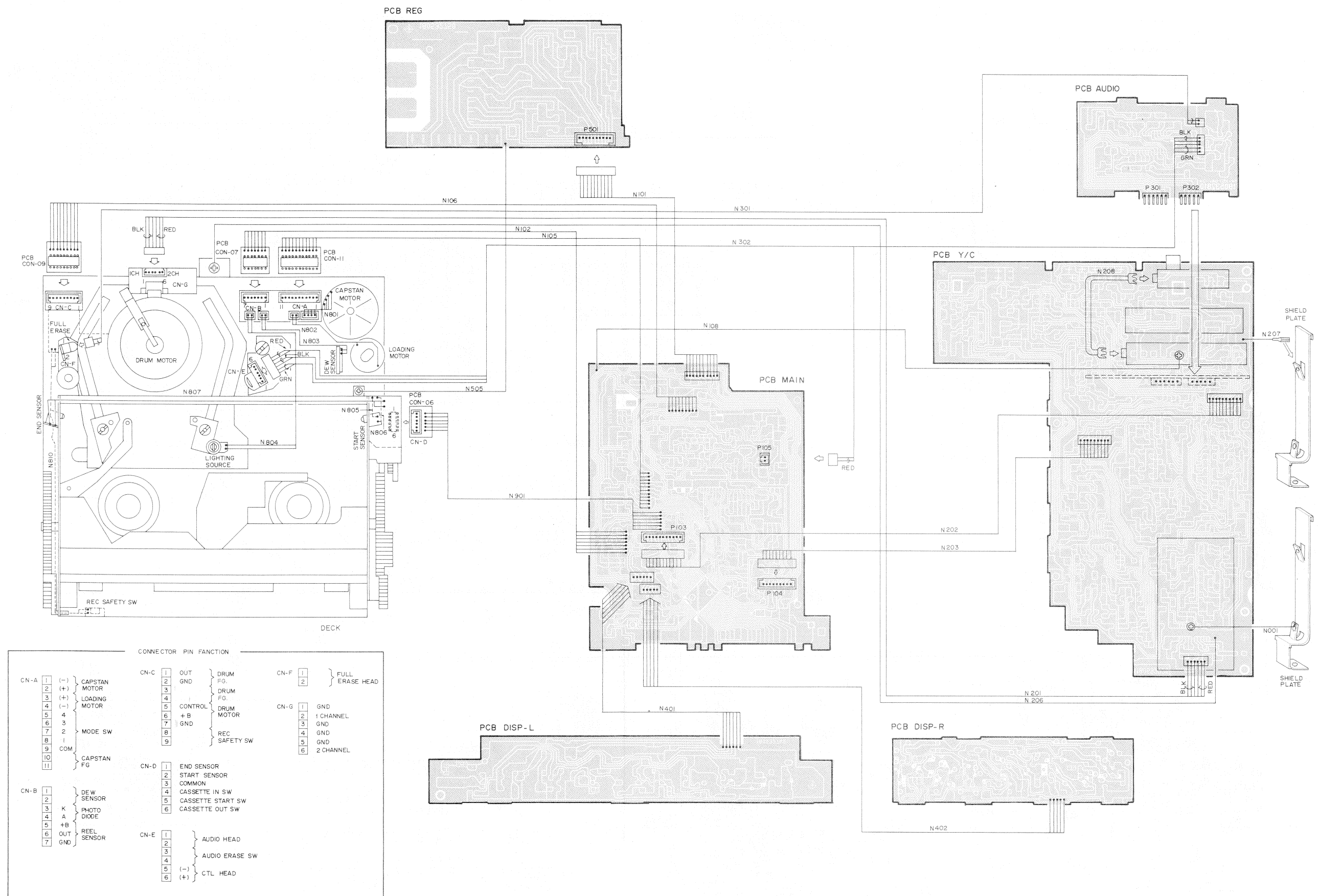


PC BOARD ASS'Y(AUDIO) 3590100/3655200



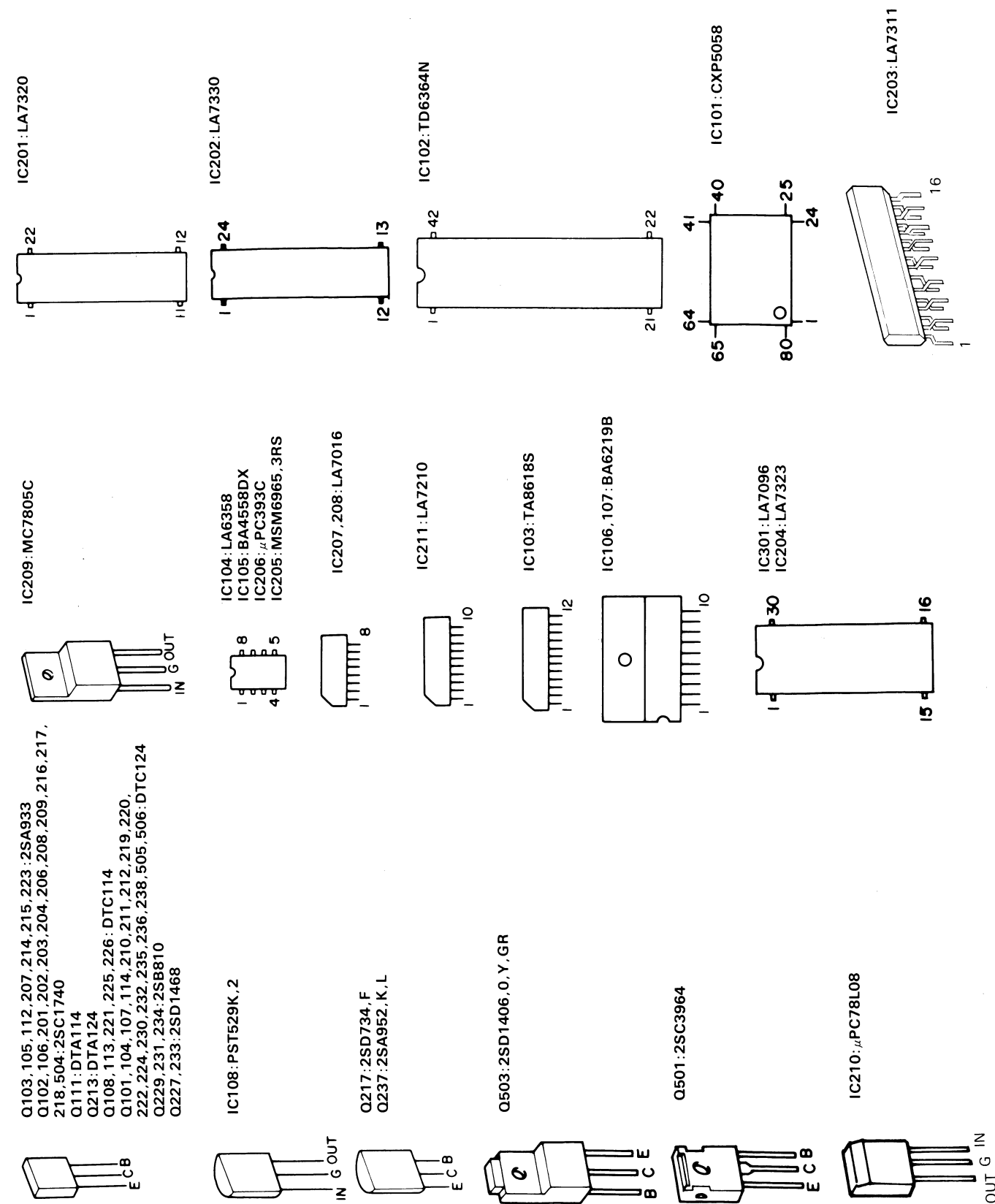
(P.B) 5mV/DIV H:1mS/DIV

Wiring Diagram



CONNECTOR PIN FUNCTION		
CN-A	1	(-) CAPSTAN MOTOR
	2	(+) CAPSTAN MOTOR
	3	(+) LOADING MOTOR
	4	(-) LOADING MOTOR
	5	4
	6	3
	7	2
	8	1
	9	COM
	10	CAPSTAN FG
	11	
CN-B	1	DEW SENSOR
	2	K
	3	A
	4	PHOTO DIODE
	5	+B
	6	OUT REEL SENSOR
	7	GND
CN-C	1	OUT
	2	GND
	3	DRUM FG
	4	DRUM FG
	5	CONTROL
	6	+B
	7	GND
	8	REC SAFETY SW
	9	
CN-D	1	END SENSOR
	2	START SENSOR
	3	COMMON
	4	CASSETTE IN SW
	5	CASSETTE START SW
	6	CASSETTE OUT SW
CN-E	1	AUDIO HEAD
	2	
	3	AUDIO ERASE SW
	4	
	5	(-) CTL HEAD
	6	(+) CTL HEAD
CN-F	1	FULL ERASE HEAD
	2	
CN-G	1	GND
	2	1 CHANNEL
	3	GND
	4	GND
	5	GND
	6	2 CHANNEL

IC,Transistor Lead Identification

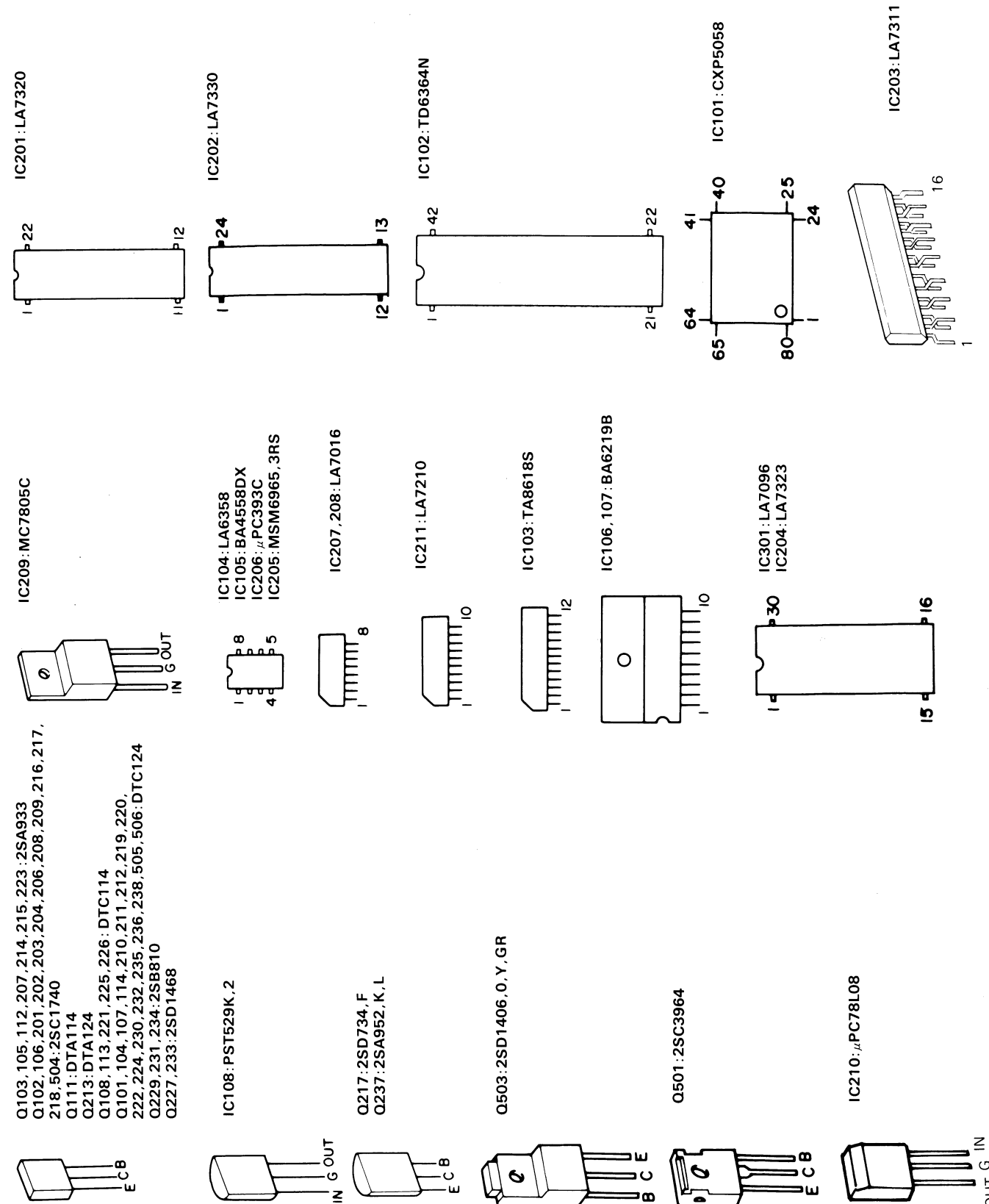


Replacement Parts List

PC BOARD ASS'Y(MAIN)3593410/3655110

Ref.No.	Part No.	Description
W101	180532710	PC Board
C101	1553107G5	Capacitor,Electrolytic,100uF 16WV
C102	154322455	Capacitor,TF,0.22uF 50WV
C103	152610205	Capacitor,Semi-Conductor,0.001uF 25WV
C104	155003925	Capacitor,Electrolytic,1uF 50WV
C105	152610305	Capacitor,Semi-Conductor,0.01uF 25WV
C106	155610525	Capacitor,Electrolytic,1uF 50WV
C107	152610305	Capacitor,Semi-Conductor,0.01uF 25WV
C108	152610305	Capacitor,Semi-Conductor,0.01uF 25WV
C109	1552107G5	Capacitor,Electrolytic,100uF 10WV
C110	1553477M5	Capacitor,Electrolytic,470uF 16WV
C111	152610305	Capacitor,Semi-Conductor,0.01uF 25WV
C112	155310625	Capacitor,Electrolytic,10uF 16WV
C113	152622305	Capacitor,Semi-Conductor,0.022uF 25WV
C114	1553476G5	Capacitor,Electrolytic,47uF 16WV
C115	155310625	Capacitor,Electrolytic,10uF 16WV
C116	155310625	Capacitor,Electrolytic,10uF 16WV
C117	155310625	Capacitor,Electrolytic,10uF 16WV
C118	1553476G5	Capacitor,Electrolytic,47uF 16WV
C119	154B18415	Capacitor,MM 0.18uF 63WV
C120	154310455	Capacitor,TF,0.1uF 50WV
C121	152610305	Capacitor,Semi-Conductor,0.01uF 25WV
C122	152610305	Capacitor,Semi-Conductor,0.01uF 25WV
C123	155610525	Capacitor,Electrolytic,1uF 50WV
C124	155310625	Capacitor,Electrolytic,10uF 16WV
C125	154339355	Capacitor,TF,0.039uF 50WV
C126	154339355	Capacitor,TF,0.039uF 50WV
C127	153410305	Capacitor,Mylar,0.01uF 50WV
C128	153410305	Capacitor,Mylar,0.01uF 50WV
C129	153447205	Capacitor,Mylar,0.0047uF 50WV
C130	153447205	Capacitor,Mylar,0.0047uF 50WV
C132	1553476G5	Capacitor,Electrolytic,47uF 16WV
C133	1553476G5	Capacitor,Electrolytic,47uF 16WV
C134	155610525	Capacitor,Electrolytic,1uF 50WV
C135	155633525	Capacitor,Electrolytic,3.3uF 50WV
C136	155647425	Capacitor,Electrolytic,0.47uF 50WV
C137	1553476G5	Capacitor,Electrolytic,47uF 16WV
C138	152622305	Capacitor,Semi-Conductor,0.022uF 25WV
C139	150700553	Capacitor,Double Layer,47000uF 5WV
C140	155622525	Capacitor,Electrolytic,2.2uF 50WV
C141	151122005	Capacitor,Ceramic,22PF 50WV
C142	151122005	Capacitor,Ceramic,22PF 50WV
C143	155622425	Capacitor,Electrolytic,0.22uF 50WV
C144	152610305	Capacitor,Semi-Conductor,0.01uF 25WV
C145	1556107G5	Capacitor,Electrolytic,100uF 50WV
C146	152610405	Capacitor,Semi-Conductor,0.1uF 25WV
C148	1556107G5	Capacitor,Electrolytic,100uF 50WV
C149	152610405	Capacitor,Semi-Conductor,0.1uF 25WV
C150	155610425	Capacitor,Electrolytic,0.1uF 50WV
C151	155647425	Capacitor,Electrolytic,0.47uF 50WV

IC, Transistor Lead Identification



Replacement Parts List

PC BOARD ASS'Y(MAIN)3593410/3655110

Ref.No.	Part No.	Description
W101	180532710	PC Board
C101	1553107G5	Capacitor,Electrolytic,100uF 16WV
C102	154322455	Capacitor,TF,0.22uF 50WV
C103	152610205	Capacitor,Semi-Conductor,0.001uF 25WV
C104	155003925	Capacitor,Electrolytic,1uF 50WV
C105	152610305	Capacitor,Semi-Conductor,0.01uF 25WV
C106	155610525	Capacitor,Electrolytic,1uF 50WV
C107	152610305	Capacitor,Semi-Conductor,0.01uF 25WV
C108	152610305	Capacitor,Semi-Conductor,0.01uF 25WV
C109	1552107G5	Capacitor,Electrolytic,100uF 10WV
C110	1553477M5	Capacitor,Electrolytic,470uF 16WV
C111	152610305	Capacitor,Semi-Conductor,0.01uF 25WV
C112	155310625	Capacitor,Electrolytic,10uF 16WV
C113	152622305	Capacitor,Semi-Conductor,0.022uF 25WV
C114	1553476G5	Capacitor,Electrolytic,47uF 16WV
C115	155310625	Capacitor,Electrolytic,10uF 16WV
C116	155310625	Capacitor,Electrolytic,10uF 16WV
C117	155310625	Capacitor,Electrolytic,10uF 16WV
C118	1553476G5	Capacitor,Electrolytic,47uF 16WV
C119	154B18415	Capacitor,MM 0.18uF 63WV
C120	154310455	Capacitor,TF,0.1uF 50WV
C121	152610305	Capacitor,Semi-Conductor,0.01uF 25WV
C122	152610305	Capacitor,Semi-Conductor,0.01uF 25WV
C123	155610525	Capacitor,Electrolytic,1uF 50WV
C124	155310625	Capacitor,Electrolytic,10uF 16WV
C125	154339355	Capacitor,TF,0.039uF 50WV
C126	154339355	Capacitor,TF,0.039uF 50WV
C127	153410305	Capacitor,Mylar,0.01uF 50WV
C128	153410305	Capacitor,Mylar,0.01uF 50WV
C129	153447205	Capacitor,Mylar,0.0047uF 50WV
C130	153447205	Capacitor,Mylar,0.0047uF 50WV
C132	1553476G5	Capacitor,Electrolytic,47uF 16WV
C133	1553476G5	Capacitor,Electrolytic,47uF 16WV
C134	155610525	Capacitor,Electrolytic,1uF 50WV
C135	155633525	Capacitor,Electrolytic,3.3uF 50WV
C136	155647425	Capacitor,Electrolytic,0.47uF 50WV
C137	1553476G5	Capacitor,Electrolytic,47uF 16WV
C138	152622305	Capacitor,Semi-Conductor,0.022uF 25WV
C139	150700553	Capacitor,Double Layer,47000uF 5WV
C140	155622525	Capacitor,Electrolytic,2.2uF 50WV
C141	151122005	Capacitor,Ceramic,22PF 50WV
C142	151122005	Capacitor,Ceramic,22PF 50WV
C143	155622425	Capacitor,Electrolytic,0.22uF 50WV
C144	152610305	Capacitor,Semi-Conductor,0.01uF 25WV
C145	1556107G5	Capacitor,Electrolytic,100uF 50WV
C146	152610405	Capacitor,Semi-Conductor,0.1uF 25WV
C148	1556107G5	Capacitor,Electrolytic,100uF 50WV
C149	152610405	Capacitor,Semi-Conductor,0.1uF 25WV
C150	155610425	Capacitor,Electrolytic,0.1uF 50WV
C151	155647425	Capacitor,Electrolytic,0.47uF 50WV

PC BOARD ASS'Y(MAIN)3593410/3655110

Ref.No.	Part No.	Description
C152	155610525	Capacitor,Electrolytic,1uF 50WV
C153	152610305	Capacitor,Semi-Conductor,0.01uF 25WV
C156	152610305	Capacitor,Semi-Conductor,0.01uF 25WV
C157	152610305	Capacitor,Semi-Conductor,0.01uF 25WV
C158	152610305	Capacitor,Semi-Conductor,0.01uF 25WV
CR101	116068600	CR Component,RKC-B6-472J
CR102	116066600	CR Component,RKC-B7-103J
CR103	116067600	CR Component,RKC-B4-103J
CR104	116071600	CR Component,RKC-B4-102J
D101	131002101	Diode,1SS254T
D102	131002101	Diode,1SS254T
D103	131002101	Diode,1SS254T
D104	131002101	Diode,1SS254T
D105	131002101	Diode,1SS254T
D106	131002101	Diode,1SS254T
D107	131002101	Diode,1SS254T
D108	131002101	Diode,1SS254T
D109	131002101	Diode,1SS254T
D110	134010811	Diode,HZS9.1JT-B2
D111	131002101	Diode,1SS254T
D112	131002101	Diode,1SS254T
D115	131002101	Diode,1SS254T
D117	131002101	Diode,1SS254T
F101	175301560	Ceramic Filter,CST3.95MG
F102	176401730	X'Tal,32.768KHZ
H101	143001100	FIP,8CGM7
IC101	119066400	IC,CXP5058-143Q
IC102	112073200	IC,TD6364N (PAL)
IC103	111327200	IC,TA8618S
IC104	111349300	IC,LA6358
IC105	111198600	IC,BA4558DX
IC106	111389600	IC,BA6219B
IC107	111389600	IC,BA6219B
IC108	111363500	IC,PST529K-2
L101	172007734	Coil,EL0606RA-101J-FT
L102	172015820	Coil,LF-7.5-101K
MD101	106002600	Module,GP1U521J
N101	196249891	QS Connector,IL10
N102	194738730	Flat Wire (B)
N105	194733B30	Flat Wire (A)
N106	194742930	Flat Wire (C)
N108	2603060	Ground Cord
N109	191214480	Wire
N110	191214580	Wire
N111	191209680	Wire
N112	191216780	Wire
N114	191210380	Wire
N117	191211C80	Wire
N120	191210180	Wire
P101	198112595	Post,IL-CM-05S-S2T2-WS

PC BOARD ASS'Y(MAIN)3593410/3655110

Ref.No.	Part No.	Description
P102	198112596	Post,IL-CM-06S-S2T2S-WS
P103	19811079B	Post,IL-S-11PS
P104	198110799	Post,IL-S-9PS
P105	198110792	Post,IL-S-2PS
Q101	120002201	Transistor,DTC124EST
Q102	123174021	Transistor,2SC1740ST-Q,R
Q103	121093321	Transistor,2SA933ST-R,S
Q104	120002201	Transistor,DTC124EST
Q105	121093321	Transistor,2SA933ST-R,S
Q106	123174021	Transistor,2SC1740ST-Q,R
Q107	120002201	Transistor,DTC124EST
Q108	120002601	Transistor,DTC114TST
Q111	120002301	Transistor,DTA114TST
Q112	121093321	Transistor,2SA933ST-R,S
Q113	120002601	Transistor,DTC114TST
R101	161310304	Resistor,Carbon,1/6W 10Kohm
R102	161310304	Resistor,Carbon,1/6W 10Kohm
R103	161368304	Resistor,Carbon,1/6W 68Kohm
R104	161310104	Resistor,Carbon,1/6W 100ohm
R105	161310404	Resistor,Carbon,1/6W 100Kohm
R106	161310404	Resistor,Carbon,1/6W 100Kohm
R107	161310504	Resistor,Carbon,1/6W 1Mohm
R108	161310404	Resistor,Carbon,1/6W 100Kohm
R109	161347204	Resistor,Carbon,1/6W 4.7Kohm
R110	161347304	Resistor,Carbon,1/6W 47Kohm
R111	161310204	Resistor,Carbon,1/6W 1Kohm
R112	161310204	Resistor,Carbon,1/6W 1Kohm
R113	161322104	Resistor,Carbon,1/6W 220ohm
R114	161310404	Resistor,Carbon,1/6W 100Kohm
R115	161310204	Resistor,Carbon,1/6W 1Kohm
R116	161310204	Resistor,Carbon,1/6W 1Kohm
R117	16412R20A	Resistor,Metal Oxide,1W 2.2ohm
R118	169157617	Resistor,Semi-Fixed 637A-104B-MT
R119	161347304	Resistor,Carbon,1/6W 47Kohm
R120	161347304	Resistor,Carbon,1/6W 47Kohm
R121	161327404	Resistor,Carbon,1/6W 270Kohm
R122	161347104	Resistor,Carbon,1/6W 470ohm
R123	161310304	Resistor,Carbon,1/6W 10Kohm
R124	161347204	Resistor,Carbon,1/6W 4.7Kohm
R125	161333304	Resistor,Carbon,1/6W 33Kohm
R126	161310304	Resistor,Carbon,1/6W 10Kohm
R127	161356104	Resistor,Carbon,1/6W 560ohm
R128	161315304	Resistor,Carbon,1/6W 15Kohm
R129	161347204	Resistor,Carbon,1/6W 4.7Kohm
R130	161333304	Resistor,Carbon,1/6W 33Kohm
R131	169157817	Resistor,Semi-Fixed KVSF687A-224B-MT
R132	169157817	Resistor,Semi-Fixed KVSF687A-224B-MT
R133	161347204	Resistor,Carbon,1/6W 4.7Kohm
R134	161347204	Resistor,Carbon,1/6W 4.7Kohm
R135	161382004	Resistor,Carbon,1/6W 82ohm

PC BOARD ASS'Y(MAIN)3593410/3655110

Ref.No.	Part No.	Description
R136	161347204	Resistor,Carbon,1/6W 4.7Kohm
R137	161347204	Resistor,Carbon,1/6W 4.7Kohm
R138	161347304	Resistor,Carbon,1/6W 47Kohm
R139	161347304	Resistor,Carbon,1/6W 47Kohm
R140	161347304	Resistor,Carbon,1/6W 47Kohm
R141	161347304	Resistor,Carbon,1/6W 47Kohm
R142	161347304	Resistor,Carbon,1/6W 47Kohm
R143	161339404	Resistor,Carbon,1/6W 390Kohm
R144	161322404	Resistor,Carbon,1/6W 220Kohm
R155	161315304	Resistor,Carbon,1/6W 15Kohm
R156	161310404	Resistor,Carbon,1/6W 100Kohm
R157	161322304	Resistor,Carbon,1/6W 22Kohm
R158	161315304	Resistor,Carbon,1/6W 15Kohm
R159	161322204	Resistor,Carbon,1/6W 2.2Kohm
R160	161322204	Resistor,Carbon,1/6W 2.2Kohm
R161	161322204	Resistor,Carbon,1/6W 2.2Kohm
R162	161322204	Resistor,Carbon,1/6W 2.2Kohm
R163	161322304	Resistor,Carbon,1/6W 22Kohm
R165	161333204	Resistor,Carbon,1/6W 3.3Kohm
R166	161312304	Resistor,Carbon,1/6W 12Kohm
R167	161322004	Resistor,Carbon,1/6W 22ohm
R168	161310204	Resistor,Carbon,1/6W 1Kohm
R169	161310304	Resistor,Carbon,1/6W 10Kohm
R170	161327404	Resistor,Carbon,1/6W 270Kohm
R171	161327404	Resistor,Carbon,1/6W 270Kohm
R172	161310304	Resistor,Carbon,1/6W 10Kohm
R173	161310304	Resistor,Carbon,1/6W 10Kohm
R175	161382104	Resistor,Carbon,1/6W 820ohm
R176	161347204	Resistor,Carbon,1/6W 4.7Kohm
R177	16412R20A	Resistor,Metal Oxide,1W 2.2ohm
R178	16412R20A	Resistor,Metal Oxide,1W 2.2ohm
R179	161382204	Resistor,Carbon,1/6W 8.2Kohm
R180	161310304	Resistor,Carbon,1/6W 10Kohm
R181	161333204	Resistor,Carbon,1/6W 3.3Kohm
R183	161318104	Resistor,Carbon,1/6W 180ohm
R185	161310304	Resistor,Carbon,1/6W 10Kohm
R186	161310304	Resistor,Carbon,1/6W 10Kohm
R187	161310304	Resistor,Carbon,1/6W 10Kohm
R188	161310204	Resistor,Carbon,1/6W 1Kohm
R189	161310304	Resistor,Carbon,1/6W 10Kohm
R190	161322304	Resistor,Carbon,1/6W 22Kohm
R191	161347204	Resistor,Carbon,1/6W 4.7Kohm
R193	16134R704	Resistor,Carbon,1/6W 4.7ohm
R194	161310204	Resistor,Carbon,1/6W 1Kohm
R196	161310504	Resistor,Carbon,1/6W 1Mohm
	198300101	Jumper 5MM (INSERT)
	198301801	Jumper 7.5MM (INSERT)
	198301901	Jumper 10MM (INSERT)
	198302001	Jumper 12.5MM (INSERT)
	198302101	Jumper 15MM (INSERT)

PC BOARD ASS'Y(MAIN)3593410/3655110

Ref.No.	Part No.	Description
	198302201	Jumper 17.5MM (INSERT)
	198302901	Jumper 20MM (INSERT)
	2114256	Heat Sink (Main)
	2212230	Holder
	2903306A	Screw.TPB2J-3X6SSA

PC BOARD ASS'Y(Y/C)3590020/3655120

Ref.No.	Part No.	Description
W201	180532720	PC Board
C203	152622305	Capacitor,Semi-Conductor,0.022uF 25WV
C204	152610205	Capacitor,Semi-Conductor,0.001uF 25WV
C205	152622305	Capacitor,Semi-Conductor,0.022uF 25WV
C206	152622305	Capacitor,Semi-Conductor,0.022uF 25WV
C207	152610205	Capacitor,Semi-Conductor,0.001uF 25WV
C208	155610525	Capacitor,Electrolytic,1uF 50WV
C209	1553476G5	Capacitor,Electrolytic,47uF 16WV
C210	152622305	Capacitor,Semi-Conductor,0.022uF 25WV
C211	152622305	Capacitor,Semi-Conductor,0.022uF 25WV
C212	152622305	Capacitor,Semi-Conductor,0.022uF 25WV
C214	152622305	Capacitor,Semi-Conductor,0.022uF 25WV
C215	152622305	Capacitor,Semi-Conductor,0.022uF 25WV
C216	1553476G5	Capacitor,Electrolytic,47uF 16WV
C217	152610305	Capacitor,Semi-Conductor,0.01uF 25WV
C218	151147005	Capacitor,Ceramic,47PF 50WV
C219	152610305	Capacitor,Semi-Conductor,0.01uF 25WV
C220	151115005	Capacitor,Ceramic,15PF 50WV
C221	152610305	Capacitor,Semi-Conductor,0.01uF 25WV
C222	151147005	Capacitor,Ceramic,47PF 50WV
C223	151147005	Capacitor,Ceramic,47PF 50WV
C224	151A33105	Capacitor,Ceramic,330PF 50WV
C225	151133005	Capacitor,Ceramic,33PF 50WV
C226	151818105	Capacitor,Ceramic,180PF 50WV
C227	151815105	Capacitor,Ceramic,150PF 50WV
C228	151118005	Capacitor,Ceramic,18PF 50WV
C229	151156005	Capacitor,Ceramic,56PF 50WV
C230	151818105	Capacitor,Ceramic,180PF 50WV
C231	152622305	Capacitor,Semi-Conductor,0.022uF 25WV
C232	152622305	Capacitor,Semi-Conductor,0.022uF 25WV
C233	152647305	Capacitor,Semi-Conductor,0.047uF 25WV
C234	153422305	Capacitor,Mylar,0.022uF 50WV
C235	152622305	Capacitor,Semi-Conductor,0.022uF 25WV
C236	155610525	Capacitor,Electrolytic,1uF 50WV
C237	151110105	Capacitor,Ceramic,100PF 50WV
C238	155610525	Capacitor,Electrolytic,1uF 50WV
C239	152610305	Capacitor,Semi-Conductor,0.01uF 25WV
C240	152622305	Capacitor,Semi-Conductor,0.022uF 25WV
C241	152610305	Capacitor,Semi-Conductor,0.01uF 25WV
C242	152610305	Capacitor,Semi-Conductor,0.01uF 25WV
C243	155610525	Capacitor,Electrolytic,1uF 50WV
C244	151143005	Capacitor,Ceramic,43PF 50WV
C245	151115105	Capacitor,Ceramic,150PF 50WV
C246	15113R005	Capacitor,Ceramic,3PF 50WV
C247	152622305	Capacitor,Semi-Conductor,0.022uF 25WV
C248	1553476G5	Capacitor,Electrolytic,47uF 16WV
C249	151147005	Capacitor,Ceramic,47PF 50WV
C250	152610305	Capacitor,Semi-Conductor,0.01uF 25WV
C251	152610305	Capacitor,Semi-Conductor,0.01uF 25WV
C252	152610305	Capacitor,Semi-Conductor,0.01uF 25WV

PC BOARD ASS'Y(Y/C)3590020/3655120

Ref.No.	Part No.	Description
C253	151A10105	Capacitor,Ceramic,100PF 50WV
C254	152622305	Capacitor,Semi-Conductor,0.022uF 25WV
C255	155447525	Capacitor,Electrolytic,4.7uF 25WV
C256	155447525	Capacitor,Electrolytic,4.7uF 25WV
C257	155310625	Capacitor,Electrolytic,10uF 16WV
C258	1552227G5	Capacitor,Electrolytic,220uF 10WV
C259	151115005	Capacitor,Ceramic,15PF 50WV
C260	1553107G5	Capacitor,Electrolytic,100uF 16WV
C261	153468305	Capacitor,Mylar,0.068uF 50WV
C262	152610305	Capacitor,Semi-Conductor,0.01uF 25WV
C264	152647305	Capacitor,Semi-Conductor,0.047uF 25WV
C265	155622525	Capacitor,Electrolytic,2.2uF 50WV
C266	155310625	Capacitor,Electrolytic,10uF 16WV
C268	155622525	Capacitor,Electrolytic,2.2uF 50WV
C269	152610300	Capacitor,Semi-Conductor,0.01uF 25WV
C270	155622525	Capacitor,Electrolytic,2.2uF 50WV
C271	155310625	Capacitor,Electrolytic,10uF 16WV
C272	151110005	Capacitor,Ceramic,10PF 50WV
C273	151156005	Capacitor,Ceramic,56PF 50WV
C274	151868005	Capacitor,Ceramic,68PF 50WV
C275	151133005	Capacitor,Ceramic,33PF 50WV
C276	155647425	Capacitor,Electrolytic,0.47uF 50WV
C277	155003925	Capacitor,Electrolytic,1uF 50WV
C278	155003925	Capacitor,Electrolytic,1uF 50WV
C279	155647425	Capacitor,Electrolytic,0.47uF 50WV
C280	151115005	Capacitor,Ceramic,15PF 50WV
C281	151133005	Capacitor,Ceramic,33PF 50WV
C282	151A39105	Capacitor,Ceramic,390PF 50WV
C283	15115R005	Capacitor,Ceramic,5PF 50WV
C284	151156005	Capacitor,Ceramic,56PF 50WV
C285	155447525	Capacitor,Electrolytic,4.7uF 25WV
C286	152610305	Capacitor,Semi-Conductor,0.01uF 25WV
C287	152610305	Capacitor,Semi-Conductor,0.01uF 25WV
C288	1552107G5	Capacitor,Electrolytic,100uF 10WV
C289	152622305	Capacitor,Semi-Conductor,0.022uF 25WV
C290	152647305	Capacitor,Semi-Conductor,0.047uF 25WV
C291	155310625	Capacitor,Electrolytic,10uF 16WV
C293	151822105	Capacitor,Ceramic,220PF 50WV
C294	151122005	Capacitor,Ceramic,22PF 50WV
C296	151133005	Capacitor,Ceramic,33PF 50WV
C297	1553476G5	Capacitor,Electrolytic,47uF 16WV
C298	1553476G5	Capacitor,Electrolytic,47uF 16WV
C299	155310625	Capacitor,Electrolytic,10uF 16WV
C2A0	1553477M5	Capacitor,Electrolytic,470uF 16WV
C2A1	155447525	Capacitor,Electrolytic,4.7uF 25WV
C2A2	1553476G5	Capacitor,Electrolytic,47uF 16WV
C2A3	1553476G5	Capacitor,Electrolytic,47uF 16WV
C2A4	155310625	Capacitor,Electrolytic,10uF 16WV
C2A5	1553107G5	Capacitor,Electrolytic,100uF 16WV
C2A6	152615305	Capacitor,Semi-Conductor,0.015uF 25WV

PC BOARD ASS'Y(Y/C)3590020/3655120

Ref.No.	Part No.	Description
C2A7	1553477M5	Capacitor,Electrolytic,470uF 16WV
C2A8	1553107G5	Capacitor,Electrolytic,100uF 16WV
C2A9	155610525	Capacitor,Electrolytic,1uF 50WV
C2B0	155610525	Capacitor,Electrolytic,1uF 50WV
C2B1	152610305	Capacitor,Semi-Conductor,0.01uF 25WV
C2B2	152610305	Capacitor,Semi-Conductor,0.01uF 25WV
C2B3	152610205	Capacitor,Semi-Conductor,0.001uF 25WV
C2B4	151A33105	Capacitor,Ceramic,330PF 50WV
C2B5	155647425	Capacitor,Electrolytic,0.47uF 50WV
C2B6	155647425	Capacitor,Electrolytic,0.47uF 50WV
C2B7	1553476G5	Capacitor,Electrolytic,47uF 16WV
C2B8	155610525	Capacitor,Electrolytic,1uF 50WV
C2B9	152610205	Capacitor,Semi-Conductor,0.001uF 25WV
C2C0	155610525	Capacitor,Electrolytic,1uF 50WV
C2C1	152610305	Capacitor,Semi-Conductor,0.01uF 25WV
C2C2	1553476G5	Capacitor,Electrolytic,47uF 16WV
C2C3	152647300	Capacitor,Semi-Conductor,0.047uF 25WV
D201	131002101	Diode,1SS254T
D202	131002101	Diode,1SS254T
D203	131002101	Diode,1SS254T
D204	131002101	Diode,1SS254T
D205	134013210	Diode,HZS9L-C1
D206	131002101	Diode,1SS254T
D207	131002101	Diode,1SS254T
D208	131002101	Diode,1SS254T
D209	131002101	Diode,1SS254T
ET201	104301040	Electronic Tuner,EC-CB-0603
F201	176403800	X'tal,HC-43U4.433619M
F202	175300860	Ceramic,Filter,CSB500E5
F203	170014700	Coil,ADL-SE1844G
IC201	111377300	IC,LA7320
IC202	111382300	IC,LA7330
IC203	111324300	IC,LA7311
IC204	111392300	IC,LA7323
IC205	112113500	IC,MSM6965-3RS
IC206	111003100	IC,UPC393C
IC207	111351300	IC,LA7016
IC208	111351300	IC,LA7016
IC209	111304700	IC,MC7805C
IC210	111002100	IC,UPC78L08
IC211	111325300	IC,LA7210
L201	172007734	Coil,EL0606RA-101J-FT
L203	172012124	Coil,LF-5.0-100K-FT
L204	172015329	Coil,LF-5.0-560K-RT
L205	172015129	Coil,LF-5.0-150K-RT
L206	172015629	Coil,LF-5.0-181K-RT
L207	172015229	Coil,LF-5.0-180K-RT
L208	172015729	Coil,LF-5.0-271K-RT
L209	172015429	Coil,LF-5.0-820K-RT
L210	172012324	Coil,LF-5.0-330K-FT

PC BOARD ASS'Y(Y/C)3590020/3655120

Ref.No.	Part No.	Description
L211	172012324	Coil,LF-5.0-330K-FT
L212	171038450	Coil,5.06M-BPF
L213	171038350	Coil,1.6M-LPF
L214	171038250	Coil,4.3M-BPF
L216	172015129	Coil,LF-5.0-150K-RT
L217	172015229	Coil,LF-5.0-180K-RT
L218	172011724	Coil,LF-5.0-2R2M-FT
L219	172007734	Coil,EL0606RA-101J-FT
L220	172012424	Coil,LF-5.0-470K-FT
L221	171038650	Coil,3.3M-LPF
L222	172015529	Coil,LF-5.0-151K-RT
L223	172012124	Coil,LF-5.0-100K-FT
L224	171038550	Coil,3.2M-LPF
L225	172007734	Coil,EL0606RA-101J-FT
L226	172007734	Coil,EL0606RA-101J-FT
L227	172007734	Coil,EL0606RA-101J-FT
MD201	106003800	Module,IF-CB-0203
MD202	106004400	Module,MCB8-UG3607
N201	196258090	QS Connector,IL06
N202	196257990	QS Connector,IL11
N203	196257890	QS Connector,IL09
N204	195311180	Strip Wire
N205	191209280	Wire
N206	2603061	Ground Cord
N207	2603059	Ground Cord
N208	192000930	Shield Wire
N209	191211380	Wire
N210	191208080	Wire
N211	191212980	Wire
N212	191211680	Wire
P201	2656141	Connector (21Pin)
Q201	123174021	Transistor,2SC1740ST-Q,R
Q202	123174021	Transistor,2SC1740ST-Q,R
Q203	123174021	Transistor,2SC1740ST-Q,R
Q204	123174021	Transistor,2SC1740ST-Q,R
Q206	123174021	Transistor,2SC1740ST-Q,R
Q207	121093321	Transistor,2SA933ST-R,S
Q208	123174021	Transistor,2SC1740ST-Q,R
Q209	123174021	Transistor,2SC1740ST-Q,R
Q210	120002201	Transistor,DTC124EST
Q211	120002201	Transistor,DTC124EST
Q212	120002201	Transistor,DTC124EST
Q213	120002401	Transistor,DTA124EST
Q214	121093321	Transistor,2SA933ST-R,S
Q215	121093321	Transistor,2SA933ST-R,S
Q216	123174021	Transistor,2SC1740ST-Q,R
Q217	123174021	Transistor,2SC1740ST-Q,R
Q218	123174021	Transistor,2SC1740ST-Q,R
Q219	120002201	Transistor,DTC124EST
Q220	120002201	Transistor,DTC124EST

PC BOARD ASS'Y(Y/C)3590020/3655120

Ref.No.	Part No.	Description
Q221	120002601	Transistor,DTC114TST
Q222	120002201	Transistor,DTC124EST
Q223	121093321	Transistor,2SA933ST-R,S
Q224	120002201	Transistor,DTC124EST
Q225	120002601	Transistor,DTC114TST
Q226	120002601	Transistor,DTC114TST
Q227	124146801	Transistor,2SD1468ST-R,S
Q229	122081011	Transistor,2SB810T-E,F
Q230	120002201	Transistor,DTC124EST
Q231	122081011	Transistor,2SB810T-E,F
Q232	120002201	Transistor,DTC124EST
Q233	124146801	Transistor,2SD1468ST-R,S
Q234	122081011	Transistor,2SB810T-E,F
Q235	120002201	Transistor,DTC124EST
Q236	120002200	Transistor,DTC124S
Q237	121095220	Transistor,2SA952-K,L
Q238	120002200	Transistor,DTC124S
R201	16135R104	Resistor,Carbon,1/6W 5.1ohm
R202	161322104	Resistor,Carbon,1/6W 220ohm
R203	161310204	Resistor,Carbon,1/6W 1Kohm
R204	161310204	Resistor,Carbon,1/6W 1Kohm
R206	161318104	Resistor,Carbon,1/6W 180ohm
R207	161310304	Resistor,Carbon,1/6W 10Kohm
R208	161322304	Resistor,Carbon,1/6W 22Kohm
R209	169157317	Resistor,Semi-Fixed KVSF637A-102B-MT
R210	161322204	Resistor,Carbon,1/6W 2.2Kohm
R211	161339104	Resistor,Carbon,1/6W 390ohm
R212	161322204	Resistor,Carbon,1/6W 2.2Kohm
R213	161339104	Resistor,Carbon,1/6W 390ohm
R214	161310204	Resistor,Carbon,1/6W 1Kohm
R215	161310204	Resistor,Carbon,1/6W 1Kohm
R216	161310204	Resistor,Carbon,1/6W 1Kohm
R217	161310204	Resistor,Carbon,1/6W 1Kohm
R218	161312204	Resistor,Carbon,1/6W 1.2Kohm
R220	161347104	Resistor,Carbon,1/6W 470ohm
R221	161310204	Resistor,Carbon,1/6W 1Kohm
R222	161322104	Resistor,Carbon,1/6W 220ohm
R223	161318204	Resistor,Carbon,1/6W 1.8Kohm
R224	161339104	Resistor,Carbon,1/6W 390ohm
R225	161310104	Resistor,Carbon,1/6W 100ohm
R226	161339204	Resistor,Carbon,1/6W 3.9Kohm
R227	161310204	Resistor,Carbon,1/6W 1Kohm
R228	161339204	Resistor,Carbon,1/6W 3.9Kohm
R229	169157510	Resistor,Semi-Fixed KVSF637A-103B
R230	161339204	Resistor,Carbon,1/6W 3.9Kohm
R231	161315204	Resistor,Carbon,1/6W 1.5Kohm
R232	161322204	Resistor,Carbon,1/6W 2.2Kohm
R233	161368104	Resistor,Carbon,1/6W 680ohm
R234	161322104	Resistor,Carbon,1/6W 220ohm
R235	161368104	Resistor,Carbon,1/6W 680ohm

PC BOARD ASS'Y(Y/C)3590020/3655120

Ref.No.	Part No.	Description
R236	161347104	Resistor,Carbon,1/6W 470ohm
R237	161312204	Resistor,Carbon,1/6W 1.2Kohm
R238	161310304	Resistor,Carbon,1/6W 10Kohm
R239	161312204	Resistor,Carbon,1/6W 1.2Kohm
R240	161310204	Resistor,Carbon,1/6W 1Kohm
R241	161322304	Resistor,Carbon,1/6W 22Kohm
R242	161310204	Resistor,Carbon,1/6W 1Kohm
R243	161322304	Resistor,Carbon,1/6W 22Kohm
R244	161382204	Resistor,Carbon,1/6W 8.2Kohm
R245	161318204	Resistor,Carbon,1/6W 1.8Kohm
R246	161322404	Resistor,Carbon,1/6W 220Kohm
R247	161310404	Resistor,Carbon,1/6W 100Kohm
R248	161347204	Resistor,Carbon,1/6W 4.7Kohm
R249	161310204	Resistor,Carbon,1/6W 1Kohm
R250	161310504	Resistor,Carbon,1/6W 1Mohm
R251	161322304	Resistor,Carbon,1/6W 22Kohm
R252	161310404	Resistor,Carbon,1/6W 100Kohm
R253	161310204	Resistor,Carbon,1/6W 1Kohm
R254	161347304	Resistor,Carbon,1/6W 47Kohm
R255	161310504	Resistor,Carbon,1/6W 1Mohm
R256	161322304	Resistor,Carbon,1/6W 22Kohm
R257	161318304	Resistor,Carbon,1/6W 18Kohm
R258	161382104	Resistor,Carbon,1/6W 820ohm
R259	161318304	Resistor,Carbon,1/6W 18Kohm
R260	161368104	Resistor,Carbon,1/6W 680ohm
R261	161312204	Resistor,Carbon,1/6W 1.2Kohm
R262	169157510	Resistor,Semi-Fixed KVSF637A-103B
R263	161347404	Resistor,Carbon,1/6W 470Kohm
R264	161315404	Resistor,Carbon,1/6W 150Kohm
R265	161368104	Resistor,Carbon,1/6W 680ohm
R266	161310304	Resistor,Carbon,1/6W 10Kohm
R267	161315304	Resistor,Carbon,1/6W 15Kohm
R268	161333304	Resistor,Carbon,1/6W 33Kohm
R269	161322204	Resistor,Carbon,1/6W 2.2Kohm
R270	161368204	Resistor,Carbon,1/6W 6.8Kohm
R271	161322204	Resistor,Carbon,1/6W 2.2Kohm
R272	161310504	Resistor,Carbon,1/6W 1Mohm
R273	161310204	Resistor,Carbon,1/6W 1Kohm
R274	161310504	Resistor,Carbon,1/6W 1Mohm
R275	161333204	Resistor,Carbon,1/6W 3.3Kohm
R276	161327204	Resistor,Carbon,1/6W 2.7Kohm
R277	169157510	Resistor,Semi-Fixed KVSF637A-103B
R278	161356104	Resistor,Carbon,1/6W 560ohm
R279	169162010	Resistor,Semi-Fixed KVSF637A-223B
R280	161322204	Resistor,Carbon,1/6W 2.2Kohm
R281	169157510	Resistor,Semi-Fixed KVSF637A-103B
R282	161310204	Resistor,Carbon,1/6W 1Kohm
R283	161310204	Resistor,Carbon,1/6W 1Kohm
R284	161310504	Resistor,Carbon,1/6W 1Mohm
R285	161322204	Resistor,Carbon,1/6W 2.2Kohm

PC BOARD ASS'Y(Y/C)3590020/3655120

Ref.No.	Part No.	Description
R286	161310204	Resistor,Carbon,1/6W 1Kohm
R287	161347204	Resistor,Carbon,1/6W 4.7Kohm
R288	161315104	Resistor,Carbon,1/6W 150ohm
R289	161327204	Resistor,Carbon,1/6W 2.7Kohm
R290	169157410	Resistor,Semi-Fixed KVSF637A-472B
R291	161310204	Resistor,Carbon,1/6W 1Kohm
R292	161333204	Resistor,Carbon,1/6W 3.3Kohm
R293	161310304	Resistor,Carbon,1/6W 10Kohm
R294	161347204	Resistor,Carbon,1/6W 4.7Kohm
R295	161347204	Resistor,Carbon,1/6W 4.7Kohm
R296	16734R714	Resistor,Fuse 1/6W 4.7ohm
R297	16734R714	Resistor,Fuse 1/6W 4.7ohm
R298	161347204	Resistor,Carbon,1/6W 4.7Kohm
R299	161347304	Resistor,Carbon,1/6W 47Kohm
R2A0	161347304	Resistor,Carbon,1/6W 47Kohm
R2A1	16734R714	Resistor,Fuse 1/6W 4.7ohm
R2A2	161310404	Resistor,Carbon,1/6W 100Kohm
R2A3	161339204	Resistor,Carbon,1/6W 3.9Kohm
R2A4	161318204	Resistor,Carbon,1/6W 1.8Kohm
R2A5	161339204	Resistor,Carbon,1/6W 3.9Kohm
R2A6	161312204	Resistor,Carbon,1/6W 1.2Kohm
R2A7	161322204	Resistor,Carbon,1/6W 2.2Kohm
R2A8	161333204	Resistor,Carbon,1/6W 3.3Kohm
R2A9	161347304	Resistor,Carbon,1/6W 47Kohm
R2B0	161310204	Resistor,Carbon,1/6W 1Kohm
R2B1	161310404	Resistor,Carbon,1/6W 100Kohm
R2B2	161375004	Resistor,Carbon,1/6W 75ohm
R2B3	161315104	Resistor,Carbon,1/6W 150ohm
R2B4	161382104	Resistor,Carbon,1/6W 820ohm
R2B5	161375004	Resistor,Carbon,1/6W 75ohm
R2B6	161347304	Resistor,Carbon,1/6W 47Kohm
R2B7	161375004	Resistor,Carbon,1/6W 75ohm
R2B8	16414700A	Resistor,Metal Oxide 1W 47ohm
R2B9	16734R714	Resistor,Fuse 1/6W 4.7ohm
R2C0	161347304	Resistor,Carbon,1/6W 47Kohm
R2C1	161310204	Resistor,Carbon,1/6W 1Kohm
R2C2	161312204	Resistor,Carbon,1/6W 1.2Kohm
R2C3	161322104	Resistor,Carbon,1/6W 220ohm
R2C4	161333404	Resistor,Carbon,1/6W 330Kohm
R2C5	161318304	Resistor,Carbon,1/6W 18Kohm
R2C6	161382304	Resistor,Carbon,1/6W 82Kohm
R2C9	161333204	Resistor,Carbon,1/6W 3.3Kohm
R2D1	161310104	Resistor,Carbon,1/6W 100ohm
R2D2	161310404	Resistor,Carbon,1/6W 100Kohm
R2D3	161310204	Resistor,Carbon,1/6W 1Kohm
R2D4	161310104	Resistor,Carbon,1/6W 100ohm
R2D5	161200008	Resistor,Carbon,1/4W 0ohm
R2D6	161200008	Resistor,Carbon,1/4W 0ohm
R2D7	161200008	Resistor,Carbon,1/4W 0ohm
R2D8	161200008	Resistor,Carbon,1/4W 0ohm

PC BOARD ASS'Y(Y/C)3590020/3655120

Ref.No.	Part No.	Description
R2D9	161200008	Resistor,Carbon,1/4W 0ohm
R2E1	161310204	Resistor,Carbon,1/6W 1Kohm
R2E2	161233101	Resistor,Carbon,1/4W 330ohm
R2E3	161315304	Resistor,Carbon,1/6W 15Kohm
R2E4	161382301	Resistor,Carbon,1/6W 82Kohm
SW201	23D1083	Slide Switch SSSB12
	198300101	Jumper 5MM (INSERT)
	198301801	Jumper 7.5MM (INSERT)
	198301901	Jumper 10MM (INSERT)
	198302001	Jumper 12.5MM (INSERT)
	198302101	Jumper 15MM (INSERT)
	198302201	Jumper 17.5MM (INSERT)
	198302901	Jumper 20MM (INSERT)
	2117216	Bracket (21Pin)
	2117229	Bracket
	2123233	Shield Plate
	2123234	Shield Plate
	2800264	Insulator
	2800308	Insulator
	2911303A	Screw,APBM-3X3SSA
*	3590100/3655200	PC Board Ass'y,Audio

PC BOARD ASS'Y(AUDIO)3590100/3655200

Ref.No.	Part No.	Description
W301	180532810	PC Board
C301	154247300	Capacitor,Polypropylene,0.047uF 50WV
C302	152610305	Capacitor,Semi-Conductor,0.01uF 25WV
C303	152610305	Capacitor,Semi-Conductor,0.01uF 25WV
C304	151A22105	Capacitor,Ceramic,220PF 50WV
C305	155447525	Capacitor,Electrolytic,4.7uF 25WV
C306	155322625	Capacitor,Electrolytic,22uF 16WV
C307	152622305	Capacitor,Semi-Conductor,0.022uF 25WV
C308	155610525	Capacitor,Electrolytic,1uF 50WV
C309	152633305	Capacitor,Semi-Conductor,0.033uF 25WV
C310	152615305	Capacitor,Semi-Conductor,0.015uF 25WV
C311	155610525	Capacitor,Electrolytic,1uF 50WV
C312	155310625	Capacitor,Electrolytic,10uF 16WV
C313	155322625	Capacitor,Electrolytic,22uF 16WV
C314	155447525	Capacitor,Electrolytic,4.7uF 25WV
C315	155310625	Capacitor,Electrolytic,10uF 16WV
C316	155322625	Capacitor,Electrolytic,22uF 16WV
C317	1553477M5	Capacitor,Electrolytic,470uF 16WV
C319	152615205	Capacitor,Semi-Conductor,0.0015uF 25WV
C320	152622205	Capacitor,Semi-Conductor,0.0022uF 25WV
C321	155610525	Capacitor,Electrolytic,1uF 50WV
C322	155610525	Capacitor,Electrolytic,1uF 50WV
C323	152615305	Capacitor,Semi-Conductor,0.015uF 25WV
C324	155610525	Capacitor,Electrolytic,1uF 50WV
C325	1553476G5	Capacitor,Electrolytic,47uF 16WV
C326	152622305	Capacitor,Semi-Conductor,0.022uF 25WV
C327	152622305	Capacitor,Semi-Conductor,0.022uF 25WV
IC301	111328300	IC,LA7096
L301	171033920	Coil,OSC-BIAS
L302	172009834	Coil,EL0606RA-560K-FT
L303	172010234	Coil,EL0909RA-223J-FT
N301	196257690	QS Connector
N302	196257790	QS Connector
P301	198106320	POST,R41-3434D
P302	198108535	POST,M34R41-3434C
Q301	124073420	Transistor,2SD734-F
R301	161347004	Resistor,Carbon,1/6W 47ohm
R302	169162910	Resistor,Semi-Fixed KVSF639A-224B
R303	161315304	Resistor,Carbon,1/6W 15Kohm
R304	161310004	Resistor,Carbon,1/6W 10ohm
R305	161318304	Resistor,Carbon,1/6W 18Kohm
R306	161310004	Resistor,Carbon,1/6W 10ohm
R307	161333104	Resistor,Carbon,1/6W 330ohm
R308	161333104	Resistor,Carbon,1/6W 330ohm
R309	161347204	Resistor,Carbon,1/6W 4.7Kohm
R310	161310504	Resistor,Carbon,1/6W 1Mohm
R311	161315304	Resistor,Carbon,1/6W 15Kohm
R312	161310304	Resistor,Carbon,1/6W 10Kohm
R313	161347304	Resistor,Carbon,1/6W 47Kohm
R314	161339104	Resistor,Carbon,1/6W 390ohm

PC BOARD ASS'Y(AUDIO)3590100/3655200

Ref.No.	Part No.	Description
R315	161339204	Resistor,Carbon,1/6W 3.9Kohm
R316	161310104	Resistor,Carbon,1/6W 100ohm
R317	161368204	Resistor,Carbon,1/6W 6.8Kohm
R318	161322404	Resistor,Carbon,1/6W 220Kohm
R319	161310204	Resistor,Carbon,1/6W 1Kohm
R320	169162810	Resistor,Semi-Fixed KVSF639A-103B
R321	161347304	Resistor,Carbon,1/6W 47Kohm
R322	161356304	Resistor,Carbon,1/6W 56Kohm
	198300101	Jumper 5MM (INSERT)
	198301901	Jumper 10MM (INSERT)
	2123197A	Shield Plate

PC BOARD ASS'Y(REG)3590030/3655130

Ref.No.	Part No.	Description
W501	180532750	PC Board
C501	1556107G5	Capacitor,Electrolytic,100uF 50WV
C502	1556107G5	Capacitor,Electrolytic,100uF 50WV
C503	1556107G5	Capacitor,Electrolytic,100uF 50WV
C504	1556107G5	Capacitor,Electrolytic,100uF 50WV
C505	1553228G0	Capacitor,Electrolytic,2200uF 16WV
C506	155310625	Capacitor,Electrolytic,10uF 16WV
C507	1552227G5	Capacitor,Electrolytic,220uF 10WV
C508	152622305	Capacitor,Semi-Conductor,0.022uF 25WV
C509	1552227G5	Capacitor,Electrolytic,220uF 10WV
C510	152622305	Capacitor,Semi-Conductor,0.022uF 25WV
C511	1554478G0	Capacitor,Electrolytic,4700uF 25WV
C512	155310625	Capacitor,Electrolytic,10uF 16WV
C513	1553477M5	Capacitor,Electrolytic,470uF 16WV
C514	152622305	Capacitor,Semi-Conductor,0.022uF 25WV
C515	154310455	Capacitor,TF,0.1uF 50WV
D501	134012001	Diode,HZS6.2JT-B1,B2,B3
D502	134011329	Diode,HZS36-2RT
D503	134011501	Diode,HZS30JT-B1,B2,B3
D504	131001801	Diode,1SS145T
D505	131001801	Diode,1SS145T
D506	132005400	Diode,RS203
D507	132005300	Diode,DBF20C
D508	134012221	Diode,HZS5.6JT.B3
D509	134011219	Diode,HZS12C-1L-RT
IC501	111393200	IC,TA78DL06
L501	174104800	Coil,PT-133
N501	2602074	Power Cord
N503	2603047	Ground Cord
N505	2603060	Ground Cord
P501	19811079A	Post,IL-S-10PS
Q501	123396400	Transistor,2SC3964
Q503	124140600	Transistor,2SD1406-O,Y,GR
Q504	123174021	Transistor,2SC1740ST-Q,R
Q505	120002201	Transistor,DTC124EST
Q506	120002201	Transistor,DTC124EST
R501	161310204	Resistor,Carbon,1/6W 1Kohm
R502	161310204	Resistor,Carbon,1/6W 1Kohm
R503	161310404	Resistor,Carbon,1/6W 100Kohm
R504	161347104	Resistor,Carbon,1/6W 470ohm
R505	161310204	Resistor,Carbon,1/6W 1Kohm
R506	161310004	Resistor,Carbon,1/6W 10ohm
R507	161315204	Resistor,Carbon,1/6W 1.5Kohm
R508	161347104	Resistor,Carbon,1/6W 470ohm
R509	161315304	Resistor,Carbon,1/6W 15Kohm
R510	161310304	Resistor,Carbon,1/6W 10Kohm
R511	161318204	Resistor,Carbon,1/6W 1.8Kohm
R512	161347104	Resistor,Carbon,1/6W 470ohm
Z501	26GA002	Mini Fuse,1.25A250V
Z502	26GA003	Mini Fuse,630MA250V

PC BOARD ASS'Y(REG)3590030/3655130

Ref.No.	Part No.	Description
	101000900	Bush MP4N4
	198300101	Jumper 5MM (INSERT)
	198301901	Jumper 10MM (INSERT)
	198302001	Jumper 12.5MM (INSERT)
	198302201	Jumper 17.5MM (INSERT)
	2114257	Heat Sink (Reg)
	2117151A	Bracket
	2117174	Bracket (Reg)
	2681018A	Terminal Guide
	26N2001	Fuse Holder
	2869001	Clamp BK1
	28HA00019	Coupler Cover SB2936
	2903308A	Screw.TPB2J-3X8SSA
	2903410A	Screw.TPB2J-4X10SSA
	290B3BAA	Screw.TPB2J-3X12X10SSA

PC BOARD ASS'Y(DISP-R)3577240/3656040

Ref.No.	Part No.	Description
W402	180532730	PC Board
N402	194723530	Flat Wire (F)
R411	161318204	Resistor,Carbon,1/6W 1.8Kohm
R414	161315204	Resistor,Carbon,1/6W 1.5Kohm
R415	161318204	Resistor,Carbon,1/6W 1.8Kohm
R416	161333204	Resistor,Carbon,1/6W 3.3Kohm
R417	161333204	Resistor,Carbon,1/6W 3.3Kohm
R418	161333204	Resistor,Carbon,1/6W 3.3Kohm
R421	161315204	Resistor,Carbon,1/6W 1.5Kohm
R422	161318204	Resistor,Carbon,1/6W 1.8Kohm
R423	161315204	Resistor,Carbon,1/6W 1.5Kohm
SW43A	23A1079	Switch KHH10902
SW43J	23A1079	Switch KHH10902
SW43K	23A1079	Switch KHH10902
SW43L	23A1079	Switch KHH10902
SW43M	23A1079	Switch KHH10902
SW43N	23A1079	Switch KHH10902
SW43O	23A1079	Switch KHH10902
SW43P	23A1079	Switch KHH10902
SW43Q	23A1079	Switch KHH10902
SW43R	23A1079	Switch KHH10902
SW43S	23A1079	Switch KHH10902
SW43T	23A1079	Switch KHH10902
SW43U	23A1079	Switch KHH10902
	198300101	Jumper 5MM (INSERT)

PC BOARD ASS'Y(DISP-L)3577250/3656050

Ref.No.	Part No.	Description
W401	180532740	PC Board
LD43A	141014600	LED,SLR-34VR3F
N401	194731630	Flat Wire (F)
R401	161333104	Resistor,Carbon,1/6W 330ohm
R402	161315204	Resistor,Carbon,1/6W 1.5Kohm
R403	161318204	Resistor,Carbon,1/6W 1.8Kohm
R404	161333204	Resistor,Carbon,1/6W 3.3Kohm
R405	161382204	Resistor,Carbon,1/6W 8.2Kohm
R406	161315204	Resistor,Carbon,1/6W 1.5Kohm
R407	161318204	Resistor,Carbon,1/6W 1.8Kohm
R408	161333204	Resistor,Carbon,1/6W 3.3Kohm
R409	161382204	Resistor,Carbon,1/6W 8.2Kohm
R410	161333304	Resistor,Carbon,1/6W 33Kohm
R424	161333204	Resistor,Carbon,1/6W 3.3Kohm
SW43B	23A1079	Switch KHH10902
SW43C	23A1079	Switch KHH10902
SW43D	23A1079	Switch KHH10902
SW43E	23A1079	Switch KHH10902
SW43F	23A1079	Switch KHH10902
SW43G	23A1079	Switch KHH10902
SW43H	23A1079	Switch KHH10902
SW43I	23A1079	Switch KHH10902
VR43A	2311558	Volume (Tracking)
VR43B	2311559	Volume (Enhancer)
	198300101	Jumper 5MM (INSERT)
	198301801	Jumper 7.5MM (INSERT)
	198301901	Jumper 10MM (INSERT)
	198302101	Jumper 15MM (INSERT)
	2212180	Holder (Ind)

PC BOARD ASS'Y(CON-11)3573560/3655160

Ref.No.	Part No.	Description
W601	180532760	PC Board
PA01	19811239B	Post,IL-SDA-11S-S2L2

PC BOARD ASS'Y(CON-09)3573570/3655170

Ref.No.	Part No.	Description
W701	180532770	PC Board
P701	198112399	Post,IL-SDA-09S-S2L2

PC BOARD ASS'Y(CON-07)3573580/3655180

Ref.No.	Part No.	Description
W801	180532780	PC Board
P801	198112397	Post,IL-SDA-07S-S2L2

PC BOARD ASS'Y(CON-06)3573590/3655190

Ref.No.	Part No.	Description
W901	1805327A0	PC Board
N901	194719630	Flat Wire (D)
P901	198112496	Post,IL-SDA-06P-S2T2

Section 3

MECHANICAL DESCRIPTION

Mechanical Adjustment

Jigs and Tools

Item	Part No.	Adjustment
Dial Gauge	VFK-0190	Reel Height
Master Plane	VFK-0191	Reel Height, Tape Guide Height
Height Gauge	VFK-0139B	Tape Guide Height
Torque Meter	VHT-063	Back Tension
Driver Large (Special)		Control Head
Driver Small (Special)		Tape Guide Height
FG Plate Mounting		FG Plate Setting
Wrench M2 Hexagon		Guide Roller Setting
Wrench M2.6 Hexagon		Capstan Pulley Setting
Wrench M3 Hexagon		A/C Head Azimuth
Mirror	VFK-0169	Tape Transportation Check
Box Driver M3		Guide Pole A/C Head Height

Mechanical Adjustment

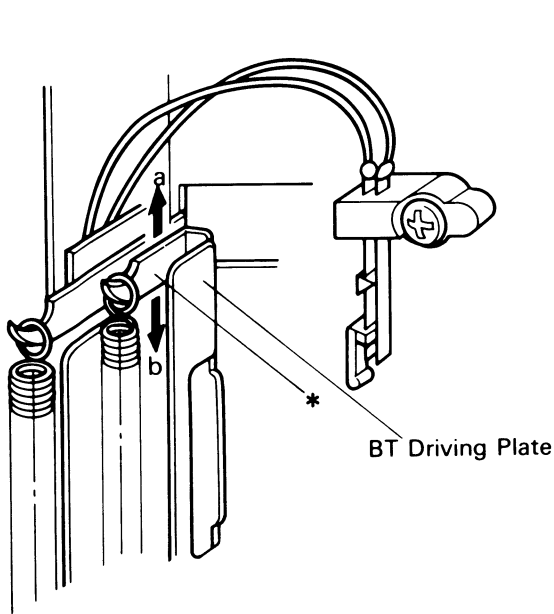


Fig. 1

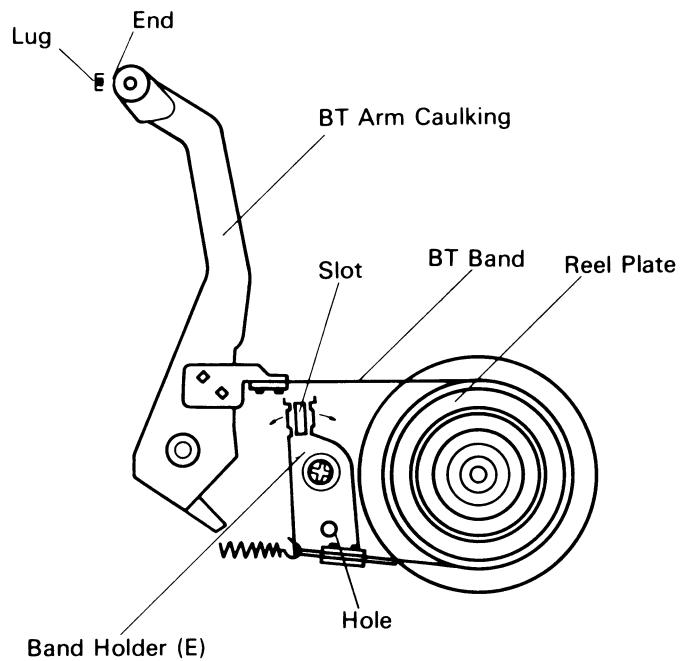


Fig. 2

1. ADJUSTMENT OF THE BT TORQUE OF THE DECK MECHANISM (Fig. 1)

Bend the portion marked *, by using a pair of pincers or the like, toward the direction indicated by an arrow to adjust the BT torque.

Bent toward direction (a) : BT torque goes up.

Bent toward direction (b) : BT torque goes down.

Caution : Do not damage the main chassis with the pincers.

Do not over-bend the portion marked *.

2. In the PLAY mode (without a tape) (Fig. 2)

While securing the band holder (E) by inserting an eyeletter or the like through the hole, adjust the distance between the edge of the BT arm caulking and the chassis lug is set approx. 0.5mm by turning a screw driver inserted through a square slot toward the direction indicated by an arrow.

3. Reel disk height

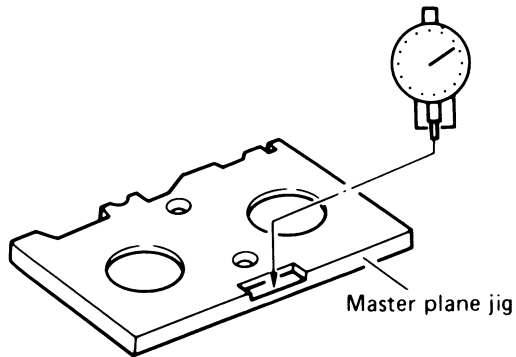


Fig. 3 Master plane jig setting

1. Set the master plane jig as shown in **Fig. 3**.

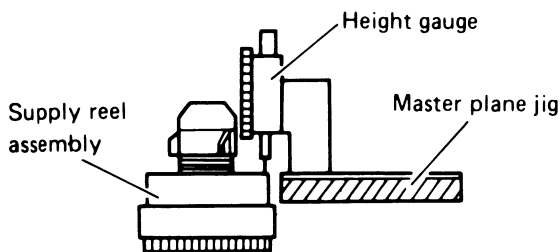


Fig. 4 Reel height adjustment

2. Set dial gauge on the master plane.
3. Check reel assembly height measure at two places 90° apart. (± 0.2 mm) (**Fig. 4**)

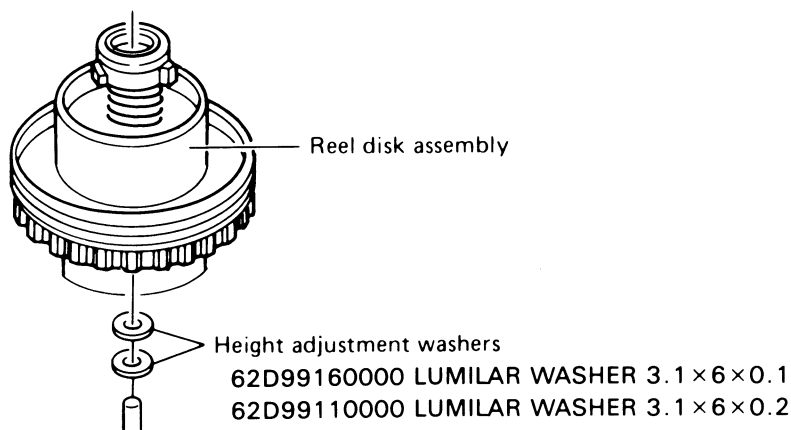


Fig. 5 Washers for height adjustment

4. If it is necessary to adjust the height, add or subtract the required number of height adjustment washers as shown in **Fig. 5**.
5. After reassembling, confirm a small amount of mechanical play between reel disk and slit washer.

4. Guide pole height adjustment

1. Set the master plane jig as shown in **Fig. 3**.

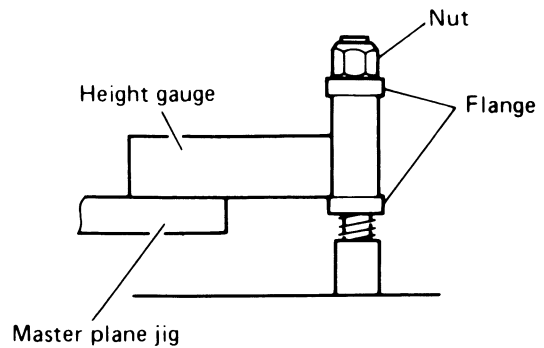


Fig. 6 Guide pole height adjustment

2. Set the height gauge on the master plane jig as shown in **Fig. 6**.
3. For each guide pole, check the height of the upper face of the lower flange. If necessary, carefully adjust by turning the nut.
4. If guide pole height has been adjusted, following checks and adjustments described in following pages are required.

5. Audio/control head

A: Tape transport adjustment

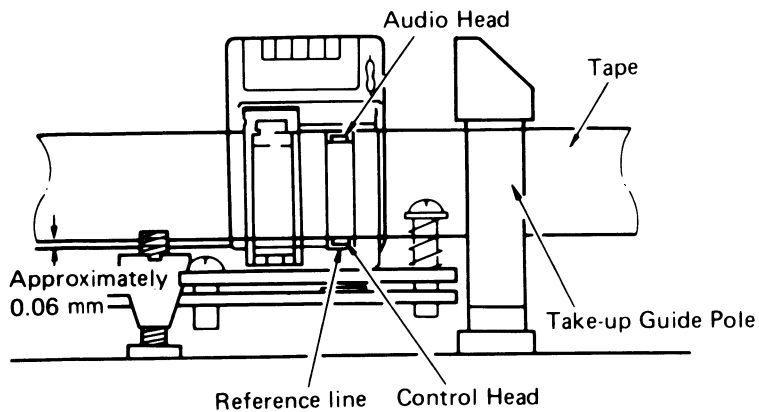


Fig. 7 A/C head adjustment

1. Employ self-recording tape and set for PLAY mode.
2. Turn screw (C) (Fig. 7-A) and adjust for smooth transport at the take-up guide pole.

B: Audio/Control head height and azimuth

1. Connect oscilloscope to Audio Out.
2. Play alignment tape (8 kHz and staircase signals) and measure the audio output level.
3. Turn nut (A), screws (B) and (C) in succession by small and equal increments at a time and adjust for maximum audio output level. With reference to nut (A), adjust azimuth with screws (B) and (C) so that small tape wrinkles are not produced at the guide pole, but at the same time, audio output becomes maximum and level fluctuations minimum. It is suggested to first turn nut (A) by a small amount, then turn screws (B) and (C) by an equal amount and set for maximum output.
4. Carefully and evenly adjust nut (A), screws (B) and (C) to align the audio/control head height with the tape as shown in Fig. 7.

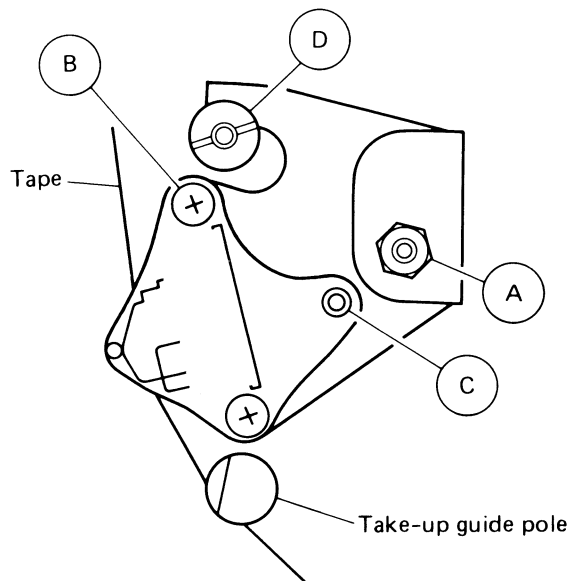


Fig. 7 - A

6. Tape Transport System Checks and Adjustment

The tape transport system has been precisely aligned at the factory and normally does not require re-adjustment. The following steps are therefore necessary only in cases of severe usage or when replacing parts affecting the tape transport system.

A: Tape transport check

1. Employ self-recording tape and operate the machine between PLAY and STOP modes several times.
2. During PLAY mode, observe tape at the input and output portions (A and B in Fig. 8) of the head drum lead. Confirm that the tape slips neither upward nor downward with respect to the lead as shown in Fig. 9.

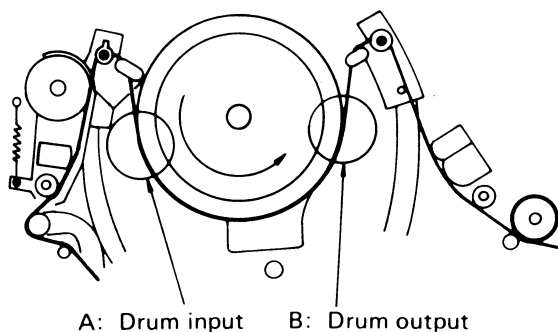


Fig. 8 Tape transport check

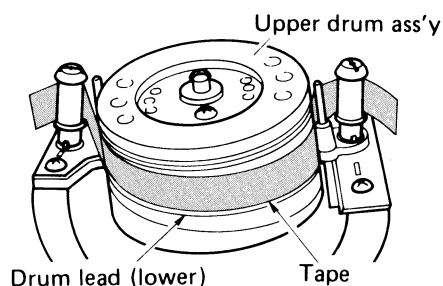


Fig. 9 Drum lead check - 1

NOTES:

1. Slips upward : sound becomes produced by contact between tips of rotating heads and edge of tape.
2. Slips downward : tape curls or wrinkles from contacting lead face (sound may also be produced).
3. During loading, Play and Unloading, observe the tape at the supply guide rollers and poles, and take-up guide rollers. Confirm absence of curling, wrinkling, etc., as shown in Fig. 10.

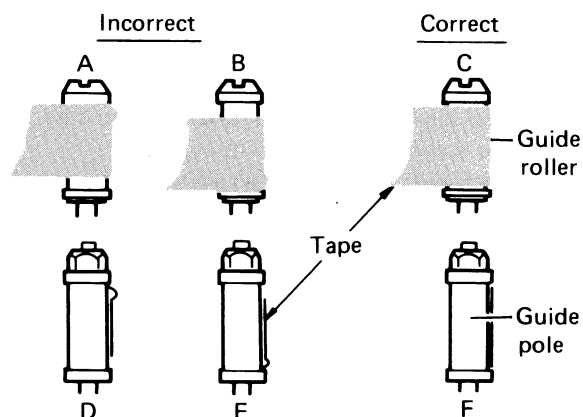


Fig. 10 Guide roller and guide pole

4. Observe the tape as it becomes wrapped around drum during loading and as it separates from the drum during unloading. Confirm absence of damage to the tape at points C and D as shown in Fig. 11 and absence of contact noise between head tips and tape edge.

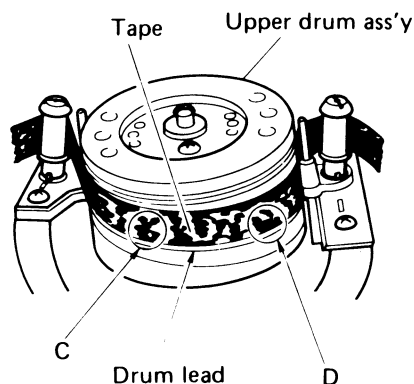


Fig. 11 Drum lead check - 2

5. If defects are noted during the above checks, perform the following adjustments.

B: Guide roller height adjustment

1. Slightly loosen setscrews of the supply and take-up guide rollers as shown in **Fig. 12**.
2. Employ self-recording tape and set for **PLAY** mode.
3. With a slotted screwdriver, slightly turn the supply guide roller (do not turn more than 180° at a time) and adjust so that at the drum input, the tape travels smoothly in the drum lead without slipping upwards or downwards.
4. Similarly, adjust the take-up guide roller for the drum output.

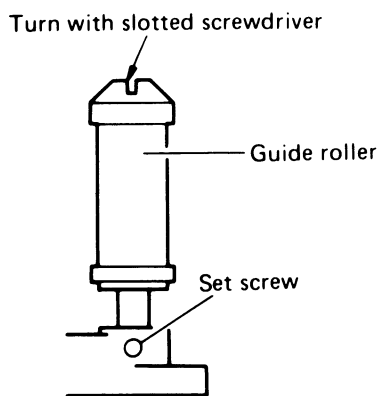


Fig. 12 Guide roller height adjustment

NOTES:

1. Loosen the setscrews only enough to allow the guide rollers to be turned.
If excessively loose, tape motion may turn the rollers inadvertently.
2. Turn the rollers carefully to avoid damage to the tape.

C: ADJUSTMENT OF THE IMPEDANCE ROLLER

While tape is running in the reverse direction :
Adjust the height of the nylon nut so that the bottom edge of the tape is not interfered by the tape guide flange.

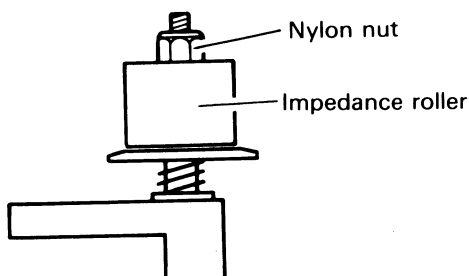


Fig. 13 Supply guide pole height adjustment

D: Tape transport check at the take-up guide pole

Generally no adjustment will be necessary for the take-up guide pole. However the adjustments or checks will be needed when replace Audio/Control head or parts affecting the tape transport system after a long period of operation.

1. Employ self-recording tape and set for **PLAY** mode.
2. Turn audio/control head screw **(C)** as shown in **Fig. 14** and adjust for smooth transport at the take-up guide pole as shown by **F** of **Fig. 10**.

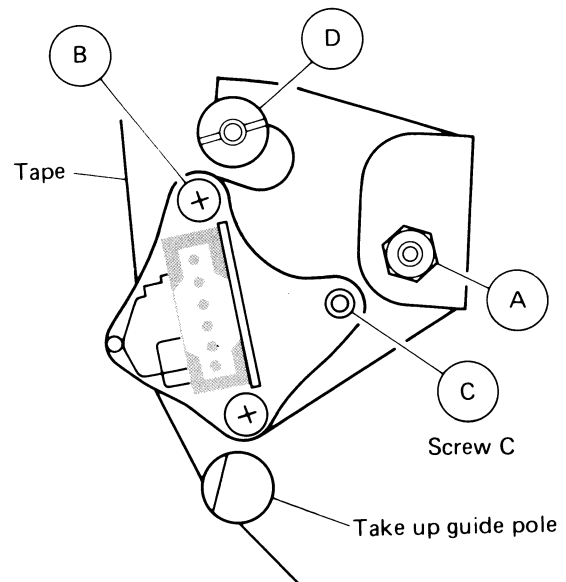


Fig. 14 Take-up guide pole

7. Interchangeability Adjustment

Before using alignment tape, employ self-recording tape and confirm correct tape transport.

① Preliminary checks

A: Check sequence 1

1. Connect oscilloscope to **TP-E**.
At this time, trigger the oscilloscope externally with the signal (RF SWITCHING PULSE) from **TP-C**.
2. Play stairstep portion of the alignment tape.
3. Turn the Tracking control and adjust for maximum FM output at DECK TERMINAL **TP-E**.
Set the Tracking control to center click position and confirm that nearly maximum output is obtained.

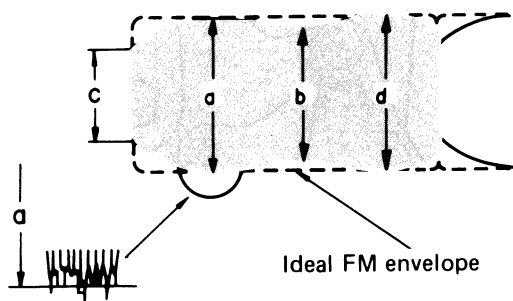


Fig. 15 FM waveform (max. output)

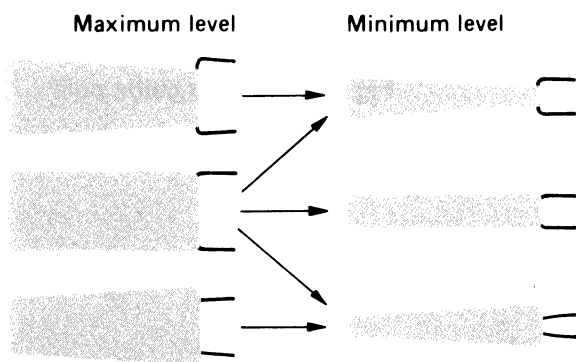


Fig. 16 Normal waveform examples

4. Refer to **Fig. 15**. Read the level of portion (a) of the waveform. If the waveform is serrated at point (a), read the value at the most uniform serrations as shown at left in **Fig. 16**.
5. As shown by the broken lines, read the FM waveform value at point (b) and confirm that:

$$\frac{b}{a} \geq 0.65 \text{ or } 20 \log \frac{b}{a} \geq -3\text{dB}$$

6. Read the values at points (c) and (d) [drum input and output] and confirm that:

$$\frac{c}{a} \geq 0.5 \text{ and } \frac{d}{a} \geq 0.5 (\geq -6 \text{ dB})$$

NOTES:

1. Read minimum levels for (b), (c) and (d).
2. If above checks yield normal results, proceed to section ① - B.
3. If defects are noted, perform preliminary adjustments in section ②

B: Check sequence 2

1. Observe the FM waveform as in the previous section (① - A) and turn the Tracking control. The waveform variation should be nearly parallel as shown in **Fig. 16**.
2. If the waveform varies as shown in **Fig. 17**, adjustment becomes required.

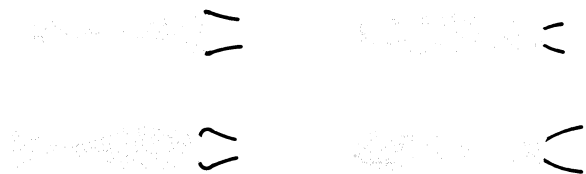


Fig. 17 Incorrect waveform examples

② Preliminary adjustments

1. Loosen the setscrews of the supply guide roller and take-up guide roller.
If the guide rollers turn freely, slightly tighten the set screws.
2. Connect oscilloscope to **TP-E**.
Trigger the oscilloscope externally with the signal from **TP-C**.
3. Play the alignment tape (stairstep signal).

A: Drum input

1. Observe oscilloscope display and adjust the Tracking control for maximum FM output.
2. Refer to **Fig. 18**. Examples of incorrect waveform are shown by A.
Use a slotted screwdriver to adjust the supply guide roller so that the rising portion (drum input portion) on the waveform becomes flat as shown by B.

NOTES:

1. If the guide roller turns freely, tighten the setscrew slightly.
2. Be sure to adjust the guide roller only by small amount at a time in order to avoid damaging the alignment tape.

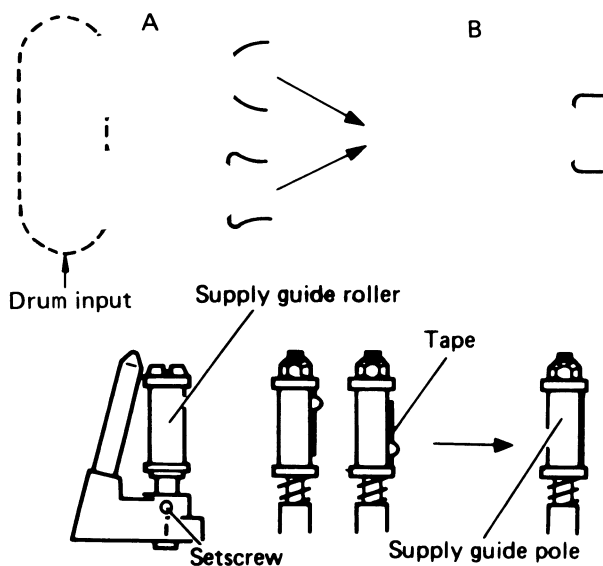


Fig. 18 Drum input adjustment

In addition to observing the waveform, confirm absence of tape slippage or curling at the drum lead and guide poles.

3. At the supply guide pole, if the tape separates from the guide or wrinkling occurs, adjust the guide pole height.

B: Drum output

1. In the same manner as for the drum input, turn the take-up guide roller to adjust the falling portion (drum output portion) of the FM waveform. Incorrect examples are shown by C in Fig. 19, while D indicates the correct adjustment.
2. If the tape separates from the guide or wrinkling occurs at the take-up guide pole, adjust by turning screw (C) of the audio/control head as shown in Fig. 20.

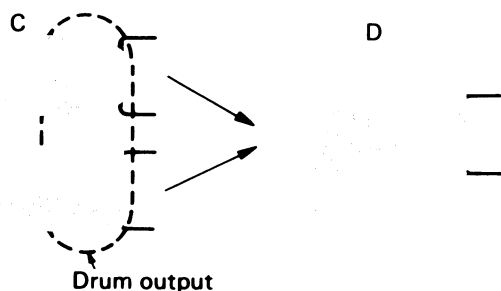


Fig. 19 Drum output adjustment

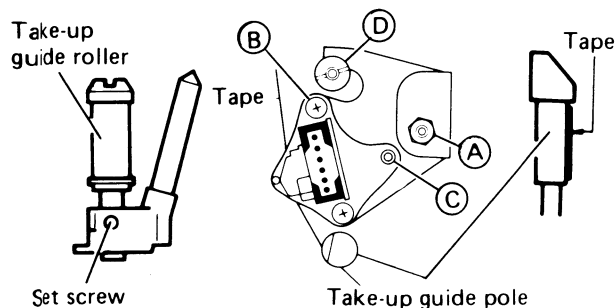


Fig. 20 Take-up guide pole

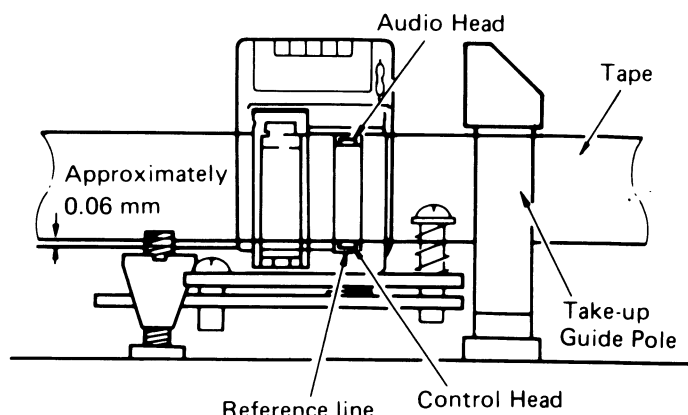


Fig. 21 Audio/Control head height

3. Carefully and evenly adjust screws (B), (C) and nut (A) to align the audio/control head height with the tape as shown in Fig. 21.

NOTES:

1. Fine adjustment is not required at this time. It is sufficient that the tape is engaged with the guide pole and servo operates properly (control signal picked up).
2. If the tape separates from the take-up guide pole or wrinkling occurs, screw (C) (Fig. 20) has been turned excessively with respect to nut (A) and screw (B) causing the audio/control head to incline forward or rearward. Use care to adjust screws (B), (C) and nut (A) evenly and observe that small wrinkles are not produced at the take-up guide pole.

③ Interchangeability fine adjustment

1. Connect oscilloscope to TP-E. Observe the FM waveform and adjust the Tracking control for minimum FM output level.

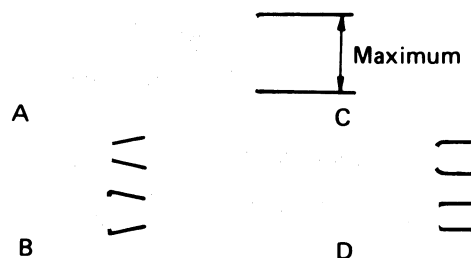


Fig. 22 Minimum FM output (incorrect examples)

2. If the waveform becomes as shown by A or B of Fig. 22, carefully adjust the supply guide roller height so that the waveform becomes as shown by E, F or G of Fig. 23. At this time, if the waveform fluctuates, adjust to the point of minimum fluctuation.

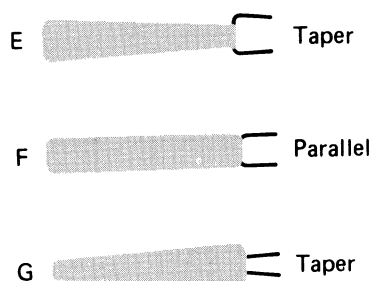


Fig. 23 Minimum FM output (correct examples)

3. If the FM waveform appears as shown by C or D in Fig. 22, carefully adjust the take-up guide roller height to obtain a waveform such as shown by E, F or G of Fig. 23.

At this time, if the waveform fluctuates, adjust to the point of minimum fluctuation.

4. Vary the Tracking control from maximum to minimum FM output.

Perform fine adjustment of supply and take-up guide rollers so that waveform variation becomes as shown by E, F or G of Fig. 23.

④ Audio/Control head height, azimuth and inclination

See section 3-B (page 66), Audio/control head height and azimuth.

⑤ Setscrew tightening

1. Check for maximum FM output waveform, maximum audio out and absence of tape wrinkling or other transport irregularities, then secure the guide rollers.

Perform in STOP mode.

2. Since the guide rollers are easily moved, use care when securing.
3. After tightening the setscrews, again perform interchangeability final check.

⑥ Interchangeability final check

Confirm section 7-①, (page 69), Preliminary checks.

⑦ Servo circuit adjustment

1. Head switching position (see Electrical Adjustment in section 3-(1), (2)).
2. Normal tracking preset (see Electrical Adjustment in section 3-(3)).

⑧ Control head phase adjustment

1. Connect oscilloscope to TP-E.
Trigger the oscilloscope externally with the signal from TP-C.
2. Play stairstep portion of the alignment tape and observe the oscilloscope display.
3. Set the Tracking control to center click position.

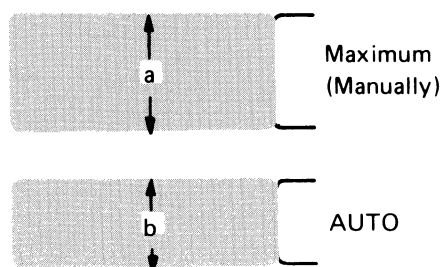


Fig. 24 FM output level

4. Confirm that the level difference between this setting and the maximum level obtained manually as shown in Fig. 24 is:

$$-20 \log \frac{b}{a} \geq 1.5\text{dB or } \frac{b}{a} \geq 0.8$$

5. If necessary, adjust as follows.

6. Set the Tracking control to center click position and play the alignment tape (stairstep).

7. Loosen tracking adjustment nut ① (Fig. 20) and slide the A/C head assembly fully to the direction of the take-up guide pole.

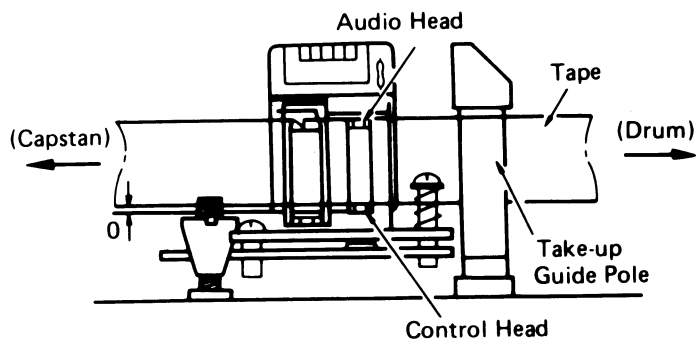


Fig. 25 Control head phase adjustment

8. Tighten adjustment nut and slide the A/C head assembly slowly in the direction of the arrow as shown in Fig. 25.

9. Set the A/C head assembly to the position where first maximum FM level is obtained. Put screw locking glue on the nut ① (Fig. 20).

⑨ Final checks

Confirm section 7-① (page 69), Preliminary checks.

PERIODIC MAINTENANCE

The following procedures are recommended for maintaining optimum performance and reliability of this video cassette player.

1 Cleaning

For cleaning, use a lint-free cloth or gauze dampened with alcohol.

A: Tape transport system

1. The following components should be cleaned after every 500 hours of use.

- 1) Impedance Roller
- 2) Tension Pole
- 3) Supply Slide Post
- 4) Supply Guide Roller
- 5) Take-Up Slide Post
- 6) Take-Up Guide Roller
- 7) Video Head & Drum System
- 8) Drum Ground
- 9) Drum Motor Shaft (Upper)
- 10) Audio/Control Head
- 11) Pinch Roller
- 12) Capstan
- 13) Reverse Guide Pole
- 14) Full Erase Head

2. Since above parts come in direct contact with video tape, they tend to collect dust particles. If allowed to accumulate, dust may lead to damage to the video tape and above parts.

3. After cleaning with alcohol, allow the parts to dry thoroughly before using a cassette tape.

NOTE:

When cleaning the two video heads on the upper drum, do not clean them with a vertical stroke.

Use only a gentle back and forth motion in the direction of the tape path.

Use care since they are easily damaged.

When cleaning video heads, A/C head, F/E head use a lint-free cloth dampened with alcohol.

B: Reel drive system

1. The following components should be cleaned after every 1000 hours of use.

—Top—

- 15) Take-Up Reel
- 16) Supply Soft Brake
- 17) Supply Brake
- 18) Take-Up Brake

—Bottom—

- 19) Capstan Motor Pulley
- 20) Drive Belt
- 21) Main Belt
- 22) Loading Belt
- 23) Capstan Flywheel
- 24) Intermediate Pulley
- 25) Loading Motor Pulley
- 26) Eject Pulley
- 27) Worm Pulley
- 28) Clutch Ass'y

2. The above revolving parts are of rubber or come in direct contact with rubber parts. Rubber dust can accumulate and interfere with proper operation.

3. Avoid using excessive alcohol when cleaning rubber parts.

2 Lubrication

The following components should be lubricated with oil after every 2,000 hours of use.

- 26) Shaft of the take-up reel
- 27) Shaft of the supply reel

After cleaning above shafts with alcohol, lubricate these shafts with one or two drops of oil.

Do not overlubricate.

3 Service schedule for main components

The following chart lists the parts which should receive periodic servicing at the recommended intervals.

Name	Periodic Service Schedule (operating hours)					Part No.
	1 000	2 000	3 000	4 000	5 000	
Upper Drum Ass'y	○	●	○	●	○	62D805901308
Drive Belt		●		●		62D80590917
Clutch Ass'y		●		●		62D805909302
Capstan motor Ass'y		●		●		62D805907302
Main Belt		●		●		62D80590710
Loading Belt		●		●		62D80591106
Back tension Band Ass'y		●		●		62D805908302
Drum Earth Bracket		●		●		62D80590102
Front Loading Clutch Ass'y		●		●		62D805916305
Supply Soft Brake Ass'y		●		●		62D805910304
Supply Brake		●		●		62D80591019
Take-Up Brake		●		●		62D80591019
Audio/Control Head			●			62D62041506
Pinch Roller			●			62D62041503
Loading Motor Ass'y			●			62D805911301
Supply Reel Ass'y			●			62D805905301
Take-Up Reel Ass'y			●			62D805905301
Full Erase Head			●			62D62041530

Fig. 26 Standard service periods

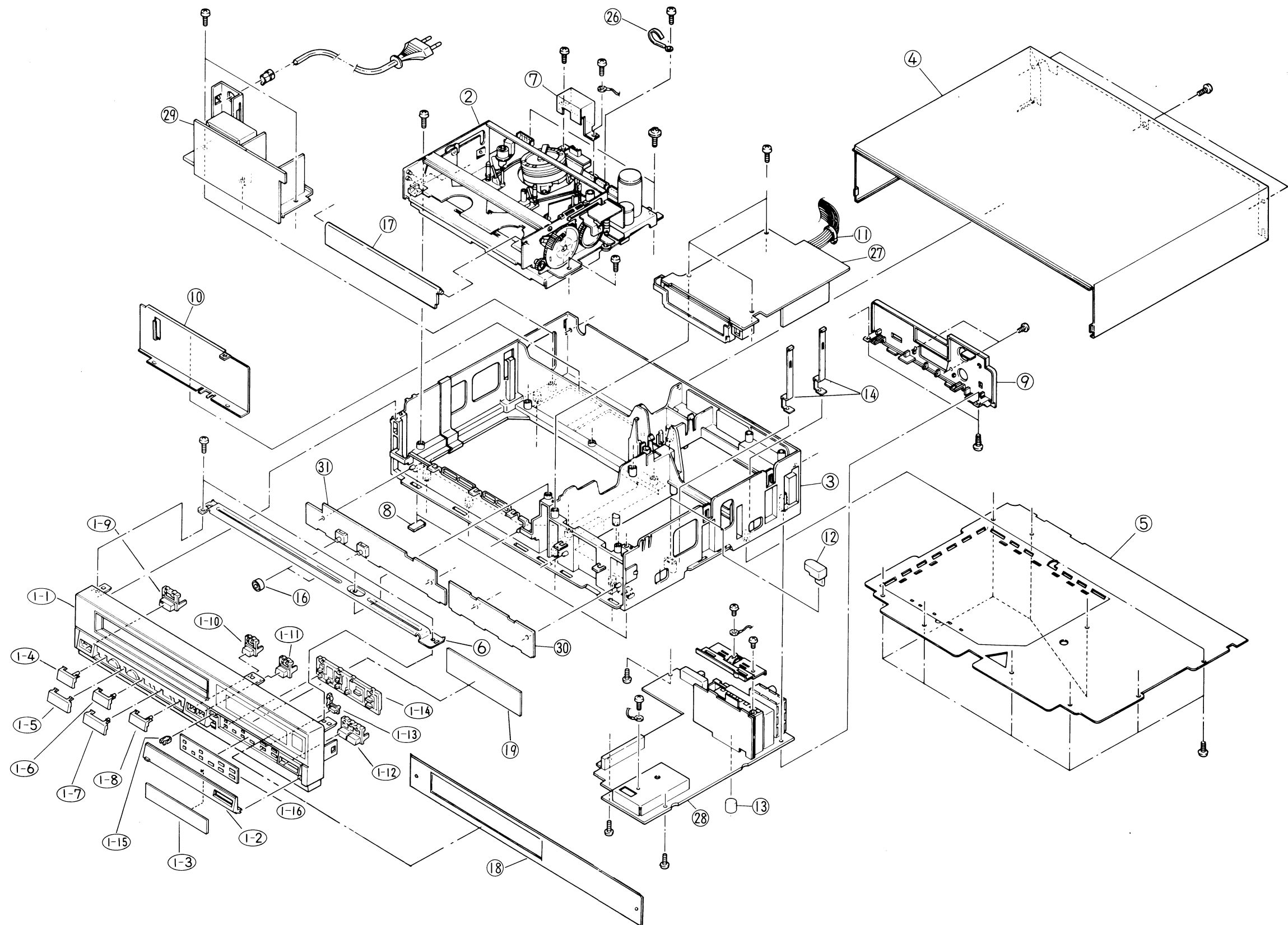
○ Check and replace if necessary

● Replace

4 Note

Even if the unit is not used frequently, Cleaning, Lubrication and Replacement of the belts should be undertaken every 2 years.

Cabinet Exploded View



ACCESSORIES

Ref.No.	Part No.	Description
1	26B1012	Cable Ass'y
2	108005000	Remote Controller,050
3	29X0009	Battery Kit

MANUALS

Ref.No.	Part No.	Description
1	2883553	Owner's Manual VCR-4530P
2	2880175	Warranty Card
3	2821053	Plastic Bag 250X350

PACKING MATERIALS

Ref.No.	Part No.	Description
1	283A001	Desiccant (B) 20G
2	2821023	Plastic Bag
3	2871172	Styrofoam
4	2871188	Styrofoam
5	2851498	Individual Box VCR-4530P

CABINET & CHASSIS

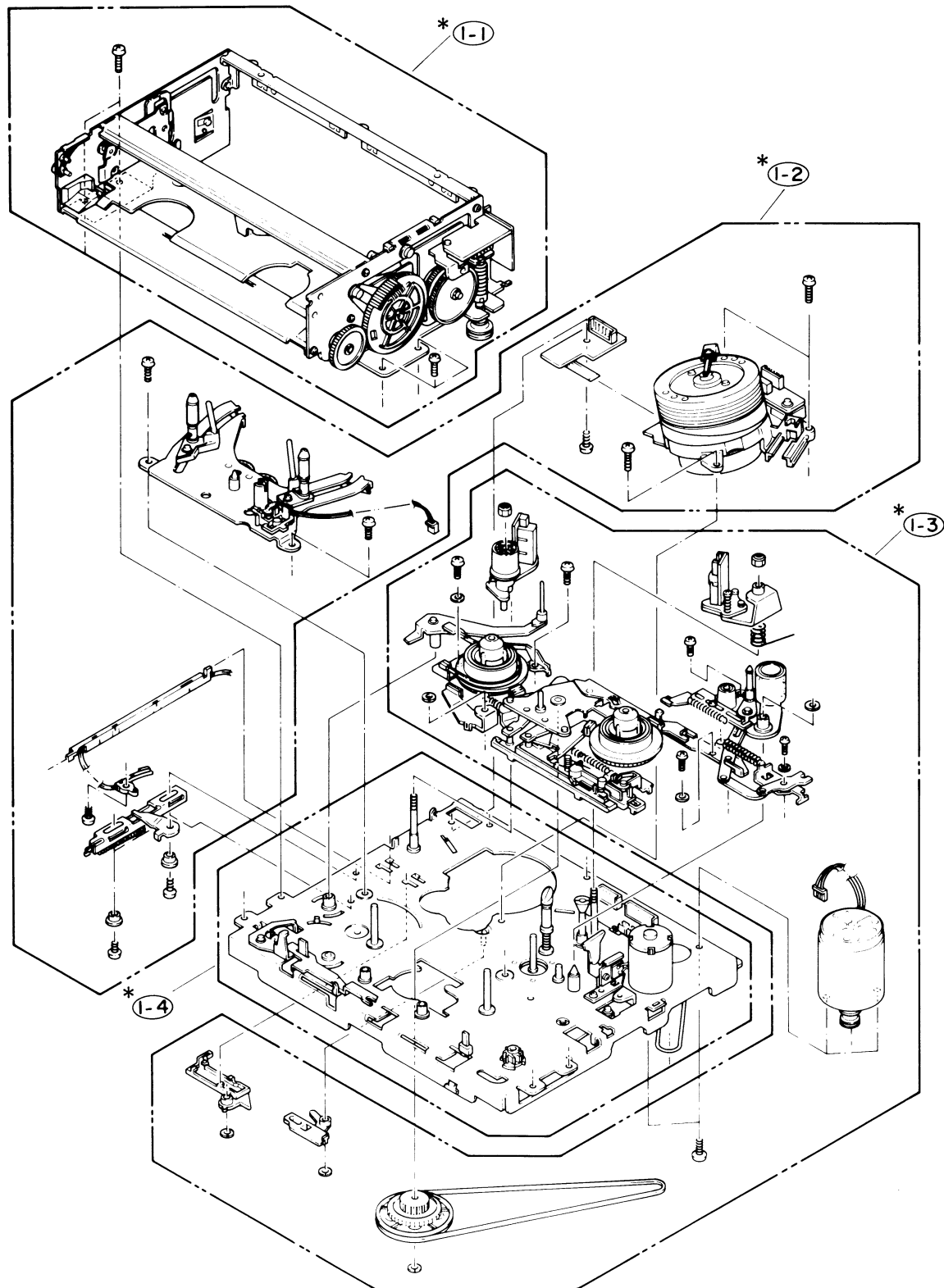
Ref.No.	Part No.	Description
1	2231467	Face Plate Ass'y
2	59214	Deck Mechanism TN5900P 2LRN107
3	2603058	Ground Cord
4	2270059	Chassis
5	2104370	Cover (Top)
6	2104328A	Cover (Bottom)
7	2117168	Bracket
8	2123187	Shield Plate (Head)
9	2535041	Cushion
10	2212290	Holder (Back)
11	2123196	Shield Plate
12	2869001	Clamp BK1
13	2537092A	Rubber Spacer (A)
14	2537094	Rubber Spacer (C)
15	2123235	Shield Plate
16	2123236	Shield Plate
17	2210315	Knob
18	2240115	Dust Cover
19	2161537	Ornamental Plate
20	2807220	Color Sheet
21	2981312C	Screw,TAP2J-3X12SSC
22	290B3BAA	Screw,TBP2J-3X12X10SSA
23	2903312A	Screw,TPB2J-3X12SSA
24	2903265A	Screw,TPB2J-2.6X5SSA
25	2952305A	Screw,DPBS-3X5SSA
26	2903312C	Screw,TPB2J-3X12SSC
27	2903310A	Screw,TPB2J-3X10SSA
28	29J3005A	Clamp,3W36.5-44X3.2X0.6SSA
29 *	3593410/3655110	PC Board Ass'y,MAIN
30 *	3590020/3655120	PC Board Ass'y,Y/C
31 *	3590030/3655130	PC Board Ass'y,REG
32 *	3577240/3656040	PC Board Ass'y,DISP-R
33 *	3577250/3656050	PC Board Ass'y,DISP-L
34 *	3573560/3655160	PC Board Ass'y,CON-11
35 *	3573570/3655170	PC Board Ass'y,CON-09
36 *	3573580/3655180	PC Board Ass'y,CON-07
37 *	3573590/3655190	PC Board Ass'y,CON-06
38	28A2377	Main Label VCR-4530P

For details of item marked *,refer to pages 43-62

FACE PLATE ASS'Y

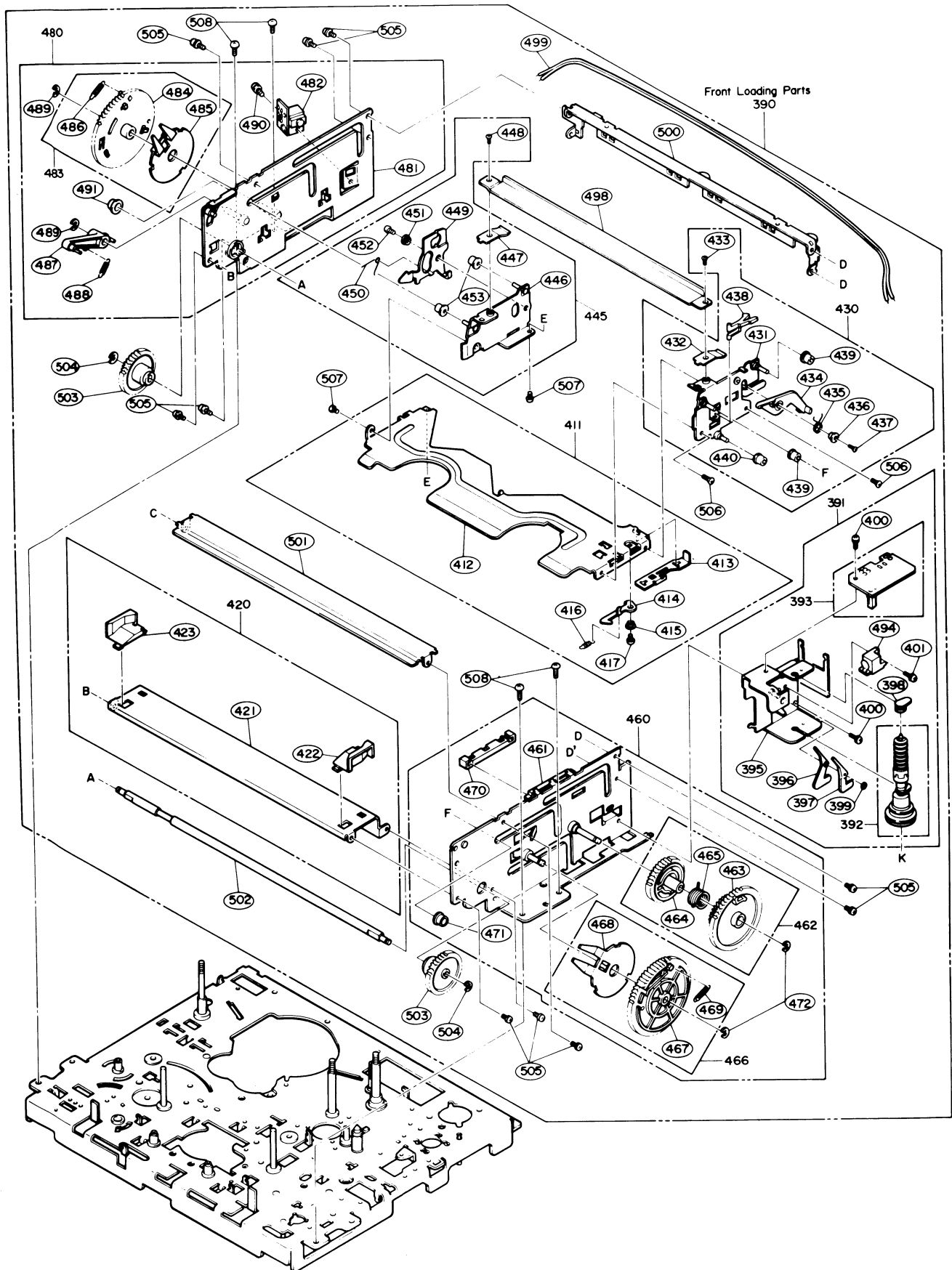
Ref.No.	Part No.	Description
1-1	2203520	Face Plate
1-2	2271225	Cover
1-3	2161378	Ornamental Plate
1-4	2258321	Push Button
1-5	2258402	Push Button
1-6	2258403	Push Button
1-7	2258404	Push Button
1-8	2258405	Push Button
1-9	2259299	Push Button Ass'y
1-10	2258298	Push Button
1-11	2258299	Push Button
1-12	2258300	Push Button
1-13	2259300	Push Button
1-14	2259331	Push Button
1-15	2212172	Holder
1-16	2161538	Ornamental Plate

Cassette Deck Exploded View-General

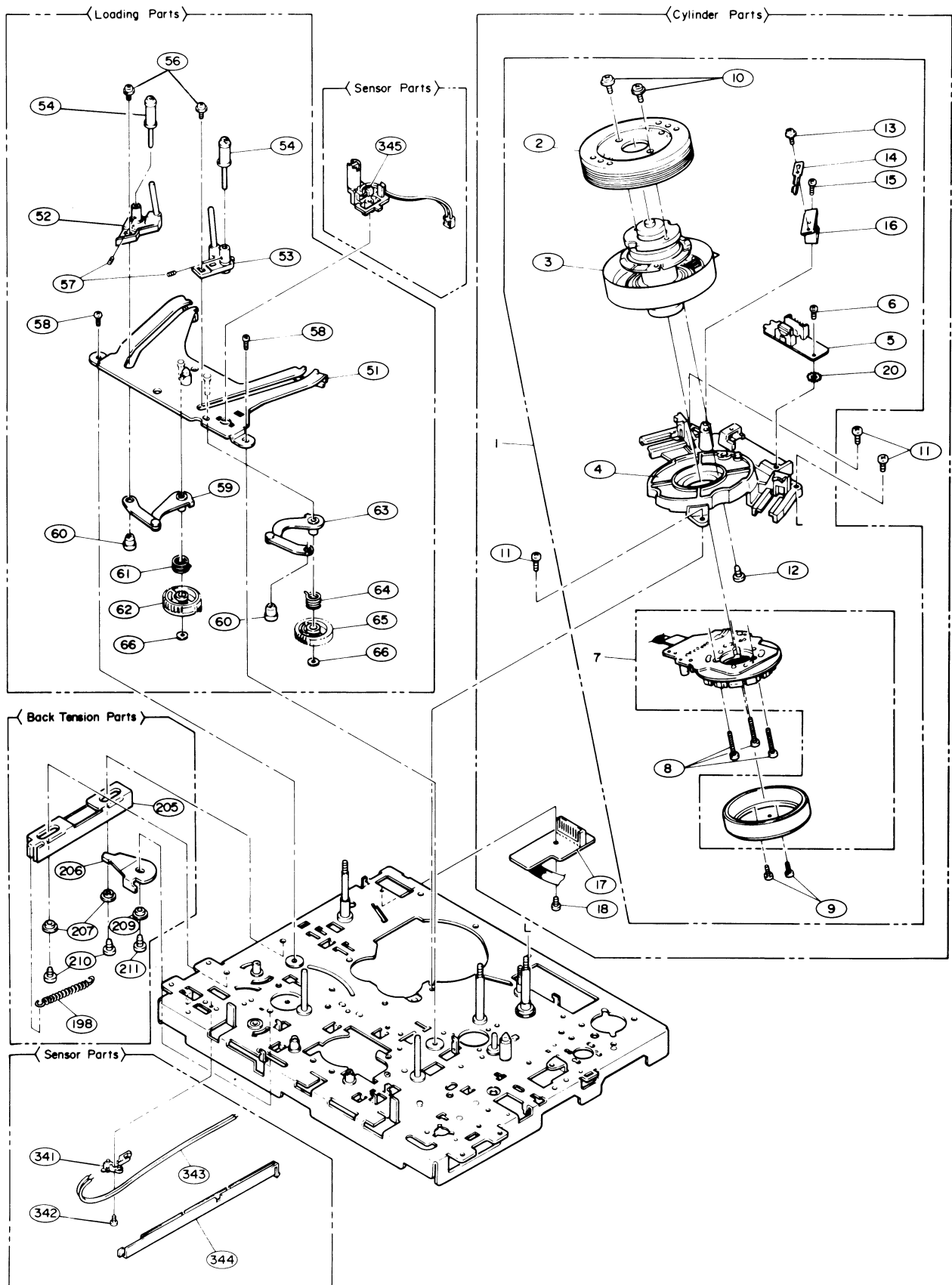


* See pages 80 through 83 for detailed exploded views of specific parts.

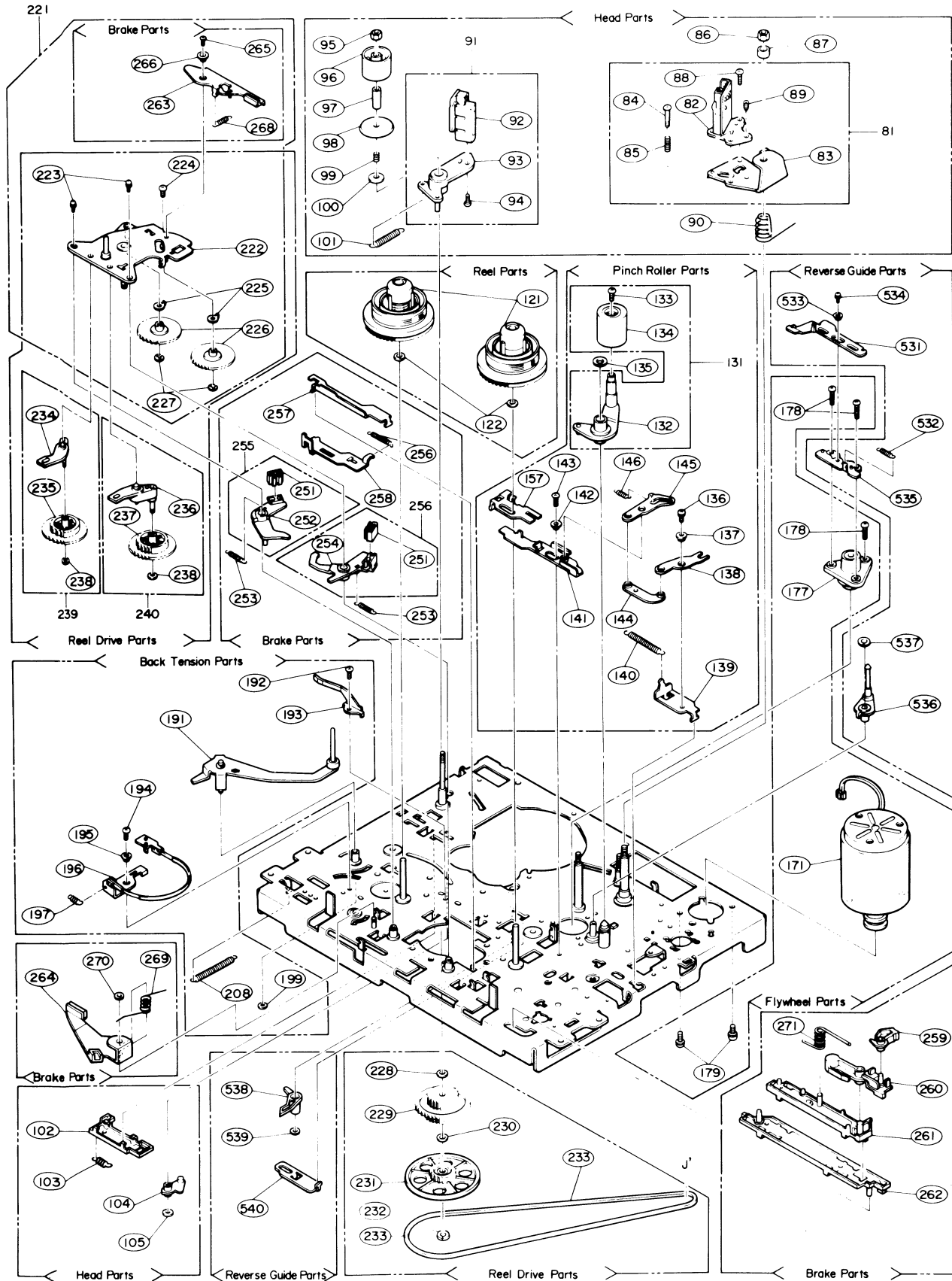
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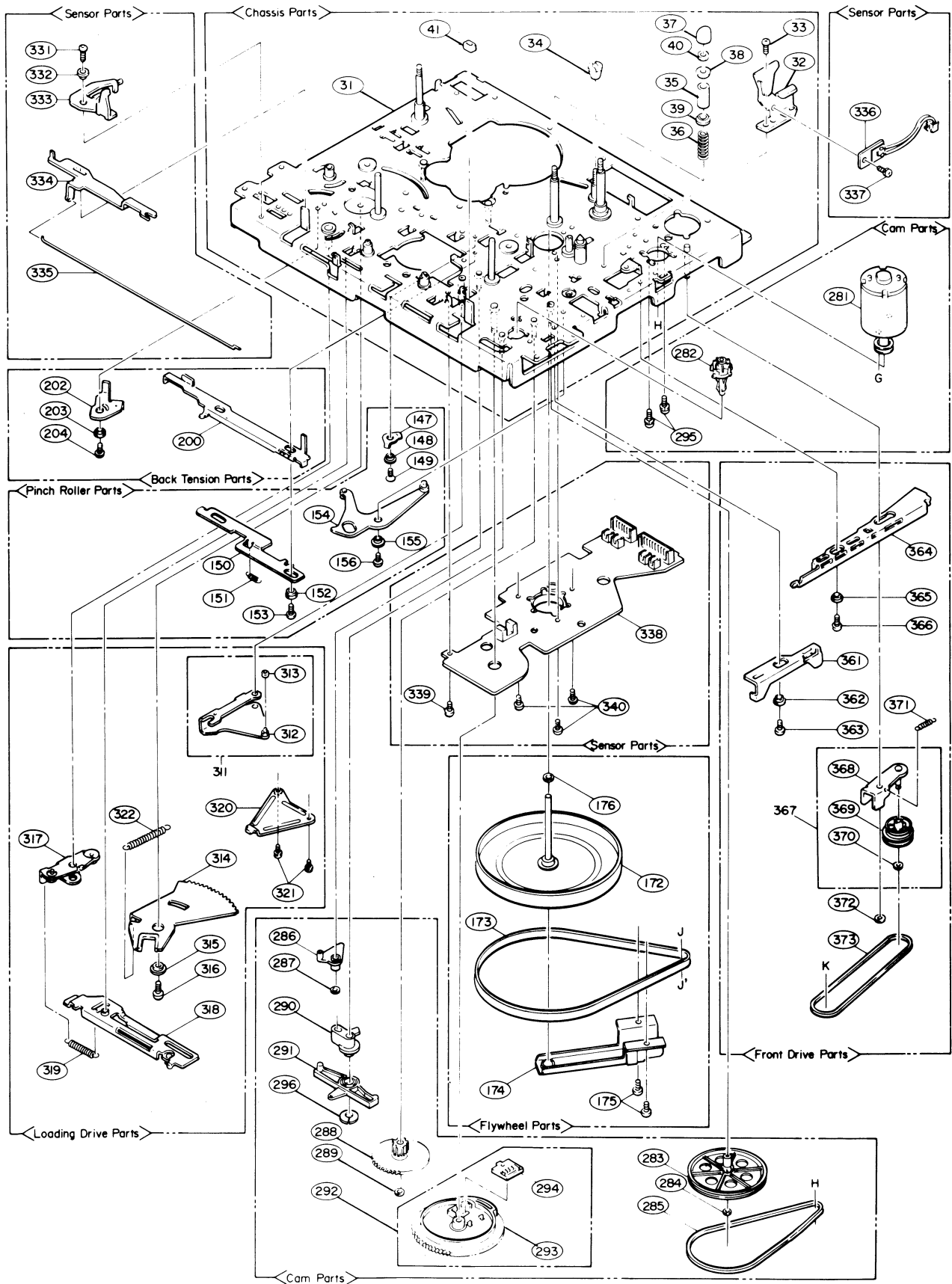
<1-2>



<1-3>



<1-4>



CASSETTE DECK MECHANISM 59214

Ref.No.	Part No.	Description
1	62D805901312	Cylinder Ass'y
2	62D80590120	Upper Drum
3	62D805901304	Lower Drum Ass'y
4	62D80590101	Cylinder Mount
5	62D805901305	Video Out P.C.B Ass'y
6	62D99730000	W Tams Screw 2.6x6
7	62D60040901	Motor TM82
8	62D90500000	Screw 2.6x20
9	62D90980000	Tams Screw 2.6x6
10	62D99720000	Bind Tams Screw 3x8
11	62D92050000	C Tapping Screw 3x10
12	62D95520000	Screw (For Camera) 2x5 (No.1)
13	62D96650000	Cup Screw 2.6x3
14	62D80590123	Drum Earth
15	62D91920000	C Tapping Screw 2.6x5
16	62D80590102	Drum Earth Bracket
17	62D805901303	DM P.C.B Ass'y
18	62D91920000	C Tapping Screw 2.6x5
20	62D97150000	Washer 2.6
31	62D805902501	Chassis Semi Ass'y
32	62D805902301	Open Angle Ass'y
33	62D91910000	C Tapping Screw 2.6x4
34	62D80000316	Tracking Adjuster
35	62D80000314	Tape Guide
36	62D80590226	Tape Guide Spring
37	62D80000319	Guide Cap
38	62D80590328	Tape Guide Flange (C)
39	62D80590225	Tape Guide Flange (F)
40	62D94530000	Nut 3.0
41	62D80590223	Dumper Rubber
51	62D805903501	Loading Base Semi Ass'y
52	62D80590304	Loading Block (L)
53	62D80590305	Loading Block (R)
54	62D80000333	Roller Post SIS
56	62D96650000	Cup Screw 2.6x3
57	62D99520000	Set Screw 2.0x3 (Plane Type)
58	62D91920000	C Tapping Screw 2.6x5
59	62D805903502	Loading Plate (L) Semi Ass'y
60	62D80590314	Loading Boss
61	62D80590308	Loading Gear Spring (L)
62	62D80590306	T Loading Gear (L)
63	62D805903503	Loading Plate (R) Semi Ass'y
64	62D80590309	Lading Gear Spring (R)
65	62D80590307	T Loading Gear (R)
66	62D98840000	P Washer Cut 2.6x6x0.5
81	62D805904303	Head Base Ass'y
82	62D62041506	ACE Head HV225211
83	62D80590501	Head Base
84	62D80000626	Azimuth Spring Screw
85	62D80000604	Azimuth Spring

CASSETTE DECK MECHANISM 59214

Ref.No.	Part No.	Description
86	62D99530000	Nylon Nut M3
87	62D80590403	Adjust Collar
88	62D90410000	Screw 2.6x7
89	62D99500000	Set Screw 3x5 (Shape Type)
90	62D80590415	Head Spring
91	62D805904302	FE Plate Ass'y
92	62D62041503	FE Head HVFMD0006
93	62D80590404	FE Plate
94	62D91140000	Flange Bind Screw 2x3
95	62D99530000	Nylon Nut M3
96	62D80590405	Impedance Roller
97	62D80590406	Impedance Roller Sleeve
98	62D80590407	Tape Guide Flange (A)
99	62D80590409	Tape Guide Flange Spring
100	62D93370000	Plane Washer 3x8x0.5
101	62D80590408	FE Plate Spring
102	62D80590410	FE Slide Plate
103	62D80590412	FE Actuate Spring
104	62D80590411	FE Actuate Lever
105	62D98760000	P Washer Cut 2.1x5x0.5
121	62D805905301	Reel Ass'y
122	62D99120000	R Washer 3.1x6x0.5
131	62D805906301	Pinch Roller Arm Ass'y
132	62D805906501	Pinch Roller Arm Semi Ass'y
133	62D90380000	Screw 2.6x4
134	62D80000922	Pinch Roller (A)
135	62D99990311	P Washer Cut 5x8x0.5
136	62D90960000	Tams Screw 2.6x4
137	62D80590618	Collar
138	62D80590605	P Actuate Angle
139	62D80590619	P Angle Holder
140	62D80590620	P Roller Spring
141	62D80590624	P Slide Plate A
142	62D80590618	Collar
143	62D91920000	C Tapping Screw 2.6x5
144	62D80590606	Joint Plate
145	62D80590604	P Actuate Arm
146	62D80590609	P Actuate Arm Spring
147	62D80590612	P Crank
148	62D80590613	P Crank Collar
149	62D99991810	C Tapping FH Screw (For Camera) 2.6x4
150	62D80590610	P Slider
151	62D80590623	P Slider Spring
152	62D80590611	P Slider Collar
153	62D91920000	C Tapping Screw 2.6x5
154	62D805906502	P Cam Lever Semi Ass'y
155	62D80590617	P Cam Lever Collar
156	62D91920000	C Tapping Screw 2.6x5
157	62D80590625	P Slide Plate B
171	62D805907302	Capstan Motor Ass'y

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Ref.No.	Part No.	Description
172	62D80590714	Flywheel Capstan
173	62D80590710	Main Belt
174	62D805907303	FL Angle Ass'y
175	62D92020000	C Tapping Screw 3x5
176	62D99120000	R Washer 3.1x6x0.5
177	62D805907301	Metal Housing Ass'y
178	62D91950000	C Tapping Screw 2.6x8
179	62D91050000	Tams Screw 3x4
191	62D805908501	BT Arm Semi Ass'y
192	62D91910000	C Tapping Screw 2.6x4
193	62D80590809	Back Tension Support
194	62D91910000	C Tapping Screw 2.6x4
195	62D80590815	Band Holder Collar
196	62D805908302	BT Band Ass'y
197	62D80590817	Band Holder Spring
198	62D80590813	Back Tension Spring
199	62D99990315	P Washer Cut 2.1x4x0.5
200	62D80590810	BT Change Plate
202	62D80590812	BT Return Lever
203	62D80590618	Collar
204	62D91920000	C Tapping Screw 2.6x5
205	62D80590819	BT Actuate Plate
206	62D80590818	BT Actuate Lever
207	62D80590821	BT Actuate Plate Collar
208	62D80590820	BT Actuate Plate Spring
209	62D80590618	Collar
210	62D98400000	S Tapping Screw (for Camera) 2.6x3.5
211	62D91920000	C Tapping Screw 2.6x5
221	62D805909307	Sub Plate Ass'y
222	62D805909501	Sub Plate Semi Ass'y
223	62D90770000	Tams Screw 2x4
224	62D91910000	C Tapping Screw 2.6x4
225	62D80001025	Wave Washer
226	62D80590906	Reel Drive Gear
227	62D95000000	E Ring S1.5
228	62D98530000	Nylon Washer 3.1x6x0.3
229	62D805909302	Clutch Ass'y
230	62D99990604	Nylon Washer 2.98x6x0.3
231	62D805909301	Middle Pulley Ass'y
232	62D98840000	P Washer Cut 2.6x6x0.5
233	62D80590917	Drive Belt
234	62D805909303	P Gear Arm Ass'y
235	62D80590920	Play Gear
236	62D805909304	RF Gear Arm Ass'y
237	62D80590922	FF Gear
238	62D97430000	P Washer Cut 1.6x3.8x0.3
239	62D805909305	P Gear Ass'y
240	62D805909306	RF Gear Ass'y
251	62D80591019	Brake Shue
252	62D80591001	S Brake Arm

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Ref.No.	Part No.	Description
253	62D80591002	Brake Arm Spring
254	62D80591003	T Brake Arm
255	62D805910301	S Brake Arm Ass'y
256	62D805910302	T Brake Arm Ass'y
257	62D80591016	Brake Lifter
258	62D80591017	L Brake Actuator
259	62D80591014	Trigger Hook
260	62D80591013	Trigger Lever
261	62D80591011	Brake Plate
262	62D80591009	Brake Actuate Base
263	62D805910303	T Soft Brake Ass'y
264	62D805910304	S Soft Brake Ass'y
265	62D99740000	SL FH Screw (For Camera) 2x3
266	62D80591007	T Soft Brake Arm Collar
267	62D80591018	L Brake Actuator Spring
268	62D80591006	T Soft Brake Arm Spring
269	62D80591022	S Soft Brake Spring
270	62D98760000	P Washer Cut 2.1x5x0.5
271	62D80591023	Trigger Lever Spring
281	62D805911301	LM Ass'y
282	62D805911302	Trigger Bearing Ass'y
283	62D80591103	Loading Pulley
284	62D97430000	P Washer Cut 1.6x3.8x0.3
285	62D80591106	Loading Belt
286	62D80591112	Search Arm (B)
287	62D98840000	P Washer Cut 2.6x6x0.5
288	62D80591104	Loading Gear
289	62D98760000	P Washer Cut 2.1x5x0.5
290	62D80591113	Brake Actuate Arm
291	62D80591114	Eject Arm
292	62D805911303	Loading Cam Ass'y
293	62D80591101	Loading Cam
294	62D80591102	S Brush
295	62D91050000	C Tapping Screw 3x4
296	62D99990310	P Washer 2.6x8x0.5
311	62D805912301	Loading Lever Ass'y
312	62D805912501	Loading Lever Semi Ass'y
313	62D80591213	Cam Roller
314	62D80591209	L Gear Plate
315	62D80591210	L Gear Plate Collar
316	62D92030000	C Tapping Screw 3x6
317	62D805912502	Loading Actuate Lever Semi Ass'y
318	62D805912503	Loading Actuator Semi Ass'y
319	62D80591205	Loading Actuator Spring
320	62D80591211	Loading Lever Reinforce Plate
321	62D90770000	Tams Screw 2x4
322	62D80591212	L Gear Plate Spring
331	62D91920000	C Tapping Screw 2.6x5
332	62D80590618	Collar
333	62D80591306	REC Lever

CASSETTE DECK MECHANISM 59214

Ref.No.	Part No.	Description
334	62D80591307	REC Actuator
335	62D80591311	REC Actuate Spoke
336	62D68080804	DEW Senser EYH-S10R
337	62D90960000	Tams Screw 2.6x4
338	62D805913302	Base Plate Ass'y
339	62D96910000	S Tapping Screw (For Camera) 2.6x5
340	62D91930000	C Tapping Screw 2.6x6
341	62D640101151	Leaf Switch MSW-1290NBKN
342	62D91920000	C Tapping Screw 2.6x5
343	62D80591308	Wire
344	62D80591310	Wire Holder
345	62D805913303	Lamp Ass'y
361	62D80591508	Eject Actuator
362	62D80590618	Collar
363	62D91920000	C Tapping Screw 2.6x5
364	62D80591507	L Brake Plate
365	62D80590618	Collar
366	62D91920000	C Tapping Screw 2.6x5
367	62D805915301	E Idler Arm Ass'y
368	62D805915501	E Idler Arm Semi Ass'y
369	62D80591505	Eject Pulley
370	62D98760000	P Washer Cut 2.1x6x0.5
371	62D80591511	Idler Arm Spring
372	62D98760000	P Washer Cut 2.1x6x0.5
373	62D80591506	FL Belt
390	62D805916303	Front Loading Ass'y
391	62D805916304	C Road Bracket Ass'y
392	62D805916305	F Loading Clutch Ass'y
393	62D805916302	FL P.C.B Ass'y
394	62D805916316	Senser P.C.B RM Ass'y
395	62D805916501	C Road Bracket Semi Ass'y
396	62D80002228	SW Lever (A)
397	62D80002229	SW Lever (B)
398	62D80591606	F Worm Bearing (A)
399	62D97430000	P Washer Cut 1.6x3.8x0.3
400	62D90960000	Tams Screw 2.6x4
401	62D90780000	Tams Screw 2x5
411	62D805916306	Cassette Holder Ass'y
412	62D80002203	Cassette Holder
413	62D80002213	Slide Plate
414	62D80002212	C Lock Plate (A)
415	62D80590618	Collar
416	62D80591629	Lock Spring
417	62D99680000	SL Screw (For Camera) 2.6x3
420	62D805916307	Front Angle Ass'y
421	62D80591618	Front Angle
422	62D80591625	Tape Guide (R)
423	62D80591624	Tape Guide (L)
430	62D805916308	Side Plate (R) Ass'y
431	62D805916502	Side Plate (R) Semi Ass'y

CASSETTE DECK MECHANISM 59214

Ref.No.	Part No.	Description
432	62D80591628	Cassette Push Plate
433	62D98330000	Screw (For Camera) 2.3x2
434	62D80002225	Open Lever
435	62D80002244	Open Lever Spring
436	62D80002242	Open Lever Collar
437	62D99670000	SL Screw (For Camera) 2x4
438	62D80002216	Lock Release Lever
439	62D80002275	Guide Roller
440	62D80002223	Guide Roller
445	62D805916309	Side Plate (L) Ass'y
446	62D805916503	Side Plate (L) Semi Ass'y
447	62D80591628	Cassette Push Plate
448	62D98330000	Screw (For Camera) 2.3x2
449	62D80002266	C Lock Plate (L)
450	62D80591630	Lock Plate Spring (L)
451	62D80001963	Lock Plate Collar
452	62D99660000	SL Screw (For Camera) 2x2.5
453	62D80002275	Guide Roller
460	62D805916310	Frame (R) Ass'y
461	62D805916504	Frame (R) Semi Ass'y
462	62D805916311	Worm Wheel Ass'y
463	62D80591620	Worm Wheel
464	62D80591623	Friction Gear
465	62D80591631	Friction Spring
466	62D805916312	Lift Gear (R) Ass'y
467	62D80591621	Lift Gear (R)
468	62D80002211	Lift Arm
469	62D80002245	LP Spring
470	62D80002226	Open Lever Guide
471	62D80002224	Guide Sleeve
472	62D95040000	E Ring S2.5
480	62D805916313	Frame (L) Ass'y
481	62D805916505	Frame (L) Semi Ass'y
482	62D805916301	Senser P.C.B (LM) Ass'y
483	62D805916314	Lift Gear (L) Ass'y
484	62D80591622	Lift Gear
485	62D80002211	Lift Arm
486	62D80002245	LP Spring
487	62D80002276	Lift Lever
488	62D80002247	Lift Lever Spring
489	62D95040000	E Ring S2.5
490	62D90990000	Tams Screw 2.6x7
491	62D80002224	Guide Sleeve
498	62D80002265	Top Stay
499	62D80591619	End Senser Wire
500	62D80591609	Rear Angle
501	62D80002207	Upper Plate
502	62D80002246	Synchronize Shaft
503	62D80591617	Synchronize Gear (A)
504	62D95040000	E Ring S2.5

CASSETTE DECK MECHANISM 59214

Ref.No.	Part No.	Description
505	62D90960000	Tams Screw 2.6x4
506	62D95560000	Screw (For Camera) 2.6x3
507	62D99910000	Screw (For Camera) 2.3x2.5 (No.3)
508	62D91920000	C Tapping Screw 2.6x4
531	62D80591703	RG Slide Plate
532	62D80591711	RG Slide Spring
533	62D80591710	RG Slide Plate Collar
534	62D90770000	Tams Screw 2x4
535	62D80591709	RG Slide Base
536	62D805917501	RG Arm Semi Ass'y
537	62D98840000	P Washer Cut 2.6x6x0.5
538	62D80591701	RG Actuate Arm
539	62D98760000	P Washer Cut 2.1x5x0.5
540	62D80591702	RG Actuator